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DATA REPORT FOR AN EXTENSIVE STORE SEPARATION TEST PROGRAM CONDUCTED AT SUPERSONIC SPEEDS

by

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and

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December 1979

TECHNICAL REPORT AFFDL-TR-79-3130
FINAL REPORT FOR PERIOD JUNE 1975 - AUGUST 1979

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This report describes an extensive store separation test program conducted at supersonic speeds in Tunnel A of the von Kármán Gas ~~Dynamics~~ Facility at Arnold Engineering Development Center. The Mach number range covered was 1.5 to 2.5. The purpose of the program was to provide a systematic set of data which could be used to evaluate and improve analytical techniques for predicting supersonic store separation trajectories. Parent aircraft configurations tested ranged from a simple circular body, mid-wing

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configuration without pylons and racks to a noncircular fuselage with wing, flow through engine inlets, and pylons and racks. The parent configuration was built up component by component so model component effects could be isolated. Flow-field survey, store pressure-distribution, store force-and-moment and store trajectory data were obtained. The stores tested were circular and elliptical in cross section with various fin arrangements. The data obtained during five wind-tunnel entries are summarized in this report. The data have been collected on magnetic tapes and FORTRAN computer programs have been written which retrieve the data from the tapes. This report also describes the use of these programs and tapes and describes the tabulated output from the programs.

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FOREWORD

This report describes an extensive store separation test program conducted at supersonic speeds in Tunnel A of the von Kármán Gas Dynamics Facility at Arnold Engineering Development Center. The Mach number range covered was 1.5 to 2.5. The purpose of the program was to provide a systematic set of data which could be used to evaluate and improve analytical techniques for predicting supersonic store separation trajectories. Parent aircraft configurations tested ranged from a simple circular body, mid-wing configuration without pylons and racks to a noncircular fuselage with wing, flow through engine inlets, and pylons and racks. The parent configuration was built up component by component so model component effects could be isolated. Flow-field survey, store pressure-distribution, store force-and-moment and store trajectory data were obtained. The stores tested were circular and elliptical in cross section with various fin arrangements.

The data obtained during five wind-tunnel entries are summarized in this report. The data have been collected on magnetic tapes and FORTRAN computer programs have been written which retrieve the data from the tapes. This report also describes the use of these programs and tapes and describes the tabulated output from the programs. The magnetic tapes and computer programs are available upon request from Mr. Calvin L. Dyer, AFFDL/FGC, Wright-Patterson AFB, Ohio, 45433.

The work was carried out by Nielsen Engineering & Research, Inc., 510 Clyde Avenue, Mountain View, California, 94043, under Contract No. F33615-76-C-3077. The contract was initiated under Project 2403, Task 240305, of the Air Force Flight Dynamics Laboratory. The Air Force Project Engineer on the contract was Calvin L. Dyer, AFFDL/FGC. The report number assigned by Nielsen Engineering & Research, Inc. is NEAR TR 205.

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C_A	axial-force coefficient, positive in the negative X-direction (see Fig. 21), axial force/$q_\infty S$
C_{A_t}	axial-force coefficient uncorrected for base pressure
C_ℓ	rolling-moment coefficient, positive right wing down as seen by pilot (see Fig. 21), rolling moment/$q_\infty Sd$
C_m	pitching-moment coefficient, positive nose up as seen by pilot and referenced to store moment center (see Fig. 21), pitching moment/$q_\infty Sd$
C_n	yawing-moment coefficient, positive nose right as seen by pilot and referenced to store moment center (see Fig. 21), yawing moment/$q_\infty Sd$
C_N	normal-force coefficient, positive in the negative Z-direction (see Fig. 21), normal force/$q_\infty S$
C_Y	side-force coefficient, positive in the positive Y-direction (see Fig. 21), side force/$q_\infty S$
d	store reference length; d = 0.75 in. for ogive-cylinder stores, d = 1.061 in. for elliptical stores
F	ejector force, lbs
F.S.	fuselage station, in.
I_{xx}, I_{yy}, I_{zz}	moments of inertia about X, Y, Z axes of Figure 21; taken about store moment center, slug-ft^2
I_{yz}, I_{xz}, I_{xy}	products of inertia about X, Y, Z axes of Figure 21; taken about store moment center, slug-ft^2
ℓ_p	duct plug position (see Fig. 8), in.
m	store mass, slugs
M_ℓ	local Mach number in flow field
M_∞	free-stream Mach number
p	pressure, psia

p_o	tunnel stagnation pressure, psia
p'_o	cone probe pitot pressure, psia
p_∞	free-stream static pressure, psia
$\bar{p}$	average cone surface static pressure, psia
q_∞	free-stream dynamic pressure, psia
Re/ft	Reynolds number per foot, ft^{-1}
S	store reference area; S = 0.4418 in.^{2} for ogive-cylinder stores, S = 0.884 in.^{2} for elliptical stores
t	time, sec
T_o	tunnel stagnation temperature, °R or °F
u,v,w	components of local velocity vector, positive directions as shown in Figure 18, ft/sec
V_{duct}	velocity in duct, ft/sec
V_∞	free-stream velocity, ft/sec
X,Y,Z	Cartesian coordinate system fixed at store moment center (see Fig. 21)
XL_1	full scale ejector foot location measured relative to store moment center, positive forward of this point, ft
X_P,Y_P,Z_P	Cartesian coordinate system fixed at parent aircraft nose (see Fig. 18)
$\Delta X_P,\Delta Y_P,\Delta Z_P$	location of store in parent aircraft coordinate system relative to carriage position
X_T,Y_T,Z_T	wind-tunnel coordinate system
α	angle of attack, deg
α_{c_s}	total angle of attack of store, deg
α_P	angle of attack of parent aircraft, deg
α_s	angle of attack of store, deg
β_s	store yaw angle, positive nose to the right, deg

$\Delta p_{1,3}$ — pressure differential between taps 1 and 3 on probe (see Fig. 17), psia

$\Delta p_{2,4}$ — pressure differential between taps 2 and 4 on probe (see Fig. 17), psia

η — linearity factor for flow-field angle evaluation, i.e.,

$$\frac{\eta}{\bar{p}} = \frac{1}{2}\frac{d}{d\alpha}\sqrt{\left(\frac{\Delta p_{1,3}}{\bar{p}}\right)^2 + \left(\frac{\Delta p_{2,4}}{\bar{p}}\right)^2}\text{, deg}^{-1}$$

σ_ℓ — local sidewash angle, deg

ϕ — roll angle, deg

ϕ_s — store roll angle, deg

ψ — flow-field rake yaw angle, deg

MODEL COMPONENT NOMENCLATURE

A_3	noncircular fuselage adapter (Fig. 5)
A_4	fuselage duct assembly for $M_\infty = 1.5$ (Fig. 6)
A_5	fuselage duct assembly for $M_\infty = 2.0$ (Fig. 7)
B_1	short fuselage without wing (Fig. 3)
B_2	long fuselage with wing (Fig. 2)
F	fairing (Fig. 14)
N_1	circular cross-section nose (Fig. 2)
N_3	noncircular cross-section nose (Fig. 4)
P_2	double-wedge pylon (Fig. 10)
P_3	swept pylon (Fig. 11)
S_{COC}	ogive-cylinder store with swept cruciform fins [Fig. 22(c)]
S_{DOC}, S_{DOC2}, S_{DOC3}	dummy ogive-cylinder store (Fig. 13)
S_E	elliptic force and moment store (Fig. 23)
S_{EP1}	elliptic pressure model no. 1 [Fig. 20(a)]
S_{EP2}	elliptic pressure model no. 2 [Fig. 20(b)]
S_{LFF}	ogive-cylinder store with rectangular fins [Fig. 22(b)]
S_{LFN}	ogive-cylinder store without fins [Fig. 22(a)]
S_P	ogive-cylinder pressure model (Fig. 19)
S_{POC}	ogive-cylinder store with swept planar fins [Fig. 22(d)]
S_{TOC}	ogive-cylinder store with swept triform fins [Fig. 22(e)]
T	triple ejection rack (Fig. 12)
W	wing (Fig. 2)

1. INTRODUCTION

This report and the related magnetic tapes and data retrieval computer programs present data obtained during an extensive external store test program. The purpose of the program was to provide systematic data at supersonic speeds for use in evaluating and improving analytical techniques for predicting store separation trajectories. The program was conducted under Air Force Contracts F33615-75-C-3053 and F33615-76-C-3077. Five wind-tunnel entries were made during the period from June 1975 through February 1978.

The test program was conducted in Tunnel A of the von Kármán Gas Dynamics Facility (VKF) at Arnold Engineering Development Center (AEDC) at nominal Mach numbers of 1.5, 1.6, 2.0, and 2.5 with most testing done at 1.5 and 2.0. Four types of data were obtained; flow-field survey data, store pressure-distribution data, store force-and-moment data, and store separation trajectories. Numerous parent aircraft configurations were used. They varied from a simple circular fuselage with or without a wing to a complex noncircular fuselage with engine inlets and pylons. The parent aircraft configurations were built up component by component in order to isolate interference effects.

A large amount of data was taken during the five wind-tunnel entries. To facilitate the distribution and use of these data, they have been recorded on magnetic tape and a series of FORTRAN programs have been written for use in retrieving the desired data.

The remainder of this report will expand further on the purpose and scope of the test program, describe the test apparatus,

and present the test conditions. This will be followed by a series of sections, each one devoted to describing a specific type of data. Information is presented which will allow the user to determine the AEDC "entry" number and "group" number for the data he is interested in. These numbers are used in conjunction with the magnetic tapes and computer programs to retrieve the data. Instructions for doing this are presented and the computer output is described.

2. PURPOSE AND SCOPE OF THE TEST PROGRAM

The purpose of the test program was to provide a systematic set of data which could be used in evaluating and improving analytical techniques and associated computer programs for predicting store separation trajectories for supersonic flight conditions. The prediction of a trajectory requires that the aerodynamic forces and moments acting on the store be predicted as it traverses the interference flow field produced by the parent aircraft. The calculation of the forces and moments requires knowledge of the flow field in which the store is immersed. For this reason all four types of data, trajectory, force and moment, pressure distribution, and flow field, were obtained.

The scope of the program was to obtain these four types of data for a range of supersonic flight conditions and parent aircraft configurations. The parent aircraft configurations ranged from a circular cross-section fuselage with or without a wing to a complex configuration with a noncircular fuselage cross section, engine inlets, and pylons. The complex configuration was built up component by component so that the effects of each added component could be determined. For example, the circular fuselage with wing

configuration was tested with and without a wing pylon. Differences in the data show the effect of the wing pylon on the flow field, store pressure distribution, and store forces and moments.

The test program was accompished in five entries into Tunnel A of VKF at AEDC. The first entry was in June 1975 and the last entry was completed in February 1978. The following table lists by entry the AEDC project number and the reference number, in the list of references at the end of this report, of the AEDC report describing the testing done during the entry.

Entry No.	AEDC Project No.	Reference
1	V41A-B4A	1
2	V41A-L5A	2
3	V41A-M9A	3
4	V41A-T9A	4
5	V41A-V6A	5

In the following sections of this report, the data obtained during the five entries will be identified using the three characters following the dash in the above list of AEDC project numbers; e.g., B4A, L5A, etc.

3. TEST APPARATUS

3.1 Wind Tunnel

Tunnel A is a continuous, closed-circuit, variable density wind tunnel with an automatically driven flexible-plate-type nozzle and a 40- by 40-in. test section. The tunnel can be

operated at Mach numbers from 1.5 to 6.0 at maximum stagnation pressures from 29 to 200 psia, respectively, and stagnation temperatures up to 750°R ($M_\infty = 6$). Minimum operating pressures range from about one-tenth to one-twentieth of the maximum at each Mach number. The tunnel is equipped with a model injection system which allows removal of the model from the test section while the tunnel remains in operation. A description of the tunnel and air-flow calibration information may be found in Reference 6.

3.2 Model Support Systems

Two separate and independent support systems were used to support the models during the test. The parent model was inverted in the test section and supported by an offset sting and strut assembly, attached to the main model support system (see Fig. 1). The flow-field probe and store models were supported on the VKF Captive Trajectory System (CTS). The standard CTS Grid Program was used for data acquisition and model attitude positioning.

The VKF-CTS is a six-degree-of-freedom model support system with electromechanical drive units. The axial and vertical movements are obtained with linear drive units while lateral movement is obtained by rotating the roll-pitch-yaw support arm about the vertical support axis of the CTS and compensating for the resulting yaw angle with counter rotation of the forward yaw mechanism. Pitch motions are obtained through a forward knuckle joint which is oriented 90° from the forward yaw knuckle joint. The most forward component of the CTS is the roll mechanism capable of rolling ±180°. A more complete description is presented in Section 2 of Reference 7. The translational and rotational envelopes and rates of travel of the CTS in Tunnel A are given as follows:

CTS MOTION CAPABILITIES IN TUNNEL A

Motion	Travel Limits*	Max Rate of Travel+
Axial, x	40 in.	1 in./sec
Vertical, z	$\pm$15 in.**	1 in./sec
Lateral, y	$\pm$15 in.**	2 in./sec
Pitch, α	$\pm$14.8 deg	10 deg/sec
Yaw, ψ	$\pm$30 deg	10 deg/sec
Roll, ϕ	$\pm$180 deg	20 deg/sec

*All travel limits are set up as a function of model size and sting geometry.

**Measured from tunnel centerline.

+Rates are continuously variable up to the rates shown in the table.

The CTS six degrees of freedom are sensed by potentiometers and read by a multiplexed analog-to-digital converter. The uncertainties in these measurements are summarized below. These estimates were made based on the uncertainties quoted for each degree of freedom and the equations of motion; i.e., an uncertainty in pitch causes an additional uncertainty in z.

CTS ATTITUDE AND POSITION UNCERTAINTIES

Motion	Drive System Uncertainty	Model Attitude and Position Uncertainty
x	±0.005 in.	±0.050 in.
y*	----------	±0.080 in.
z	±0.005 in.	±0.060 in.
α	±0.05 deg	±0.10 deg
ψ*	±0.05 deg	±0.10 deg
ϕ	±0.10 deg	±0.10 deg
η*	±0.03 deg	----------

*The yaw angles ψ and η are used to obtain both yaw angle and lateral displacement, y.

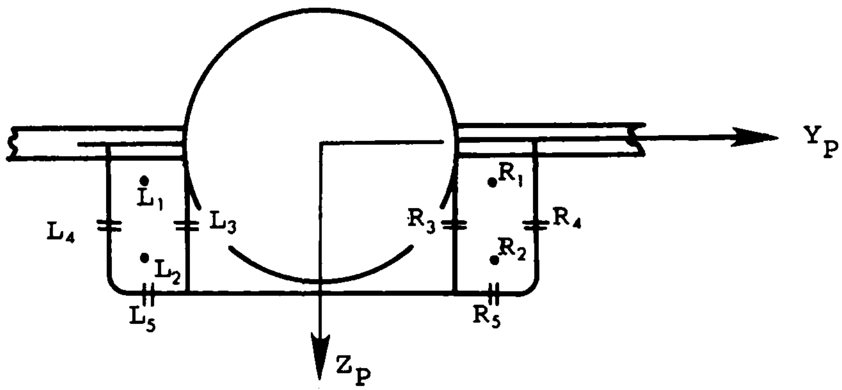
3.3 Parent Aircraft Model Components

The basic wing-fuselage combination N_1B_2W used in the test program is shown in Figure 2. It consists of nose N_1, body B_2, and wing W. The wing has an uncambered NACA 65A006 airfoil section. Nose N_1 was combined with body B_1 shown in Figure 3 to form a circular body-alone configuration, N_1B_1. A noncircular body-alone configuration $N_3B_1A_3$ was tested. This was made up of nose N_3 shown in Figure 4 with the noncircular fuselage adapter A_3 shown in Figure 5 attached to body B_1.

Three noncircular wing-fuselage combinations were tested. These are designated $N_3B_2WA_3$, $N_3B_2WA_4$, and $N_3B_2WA_5$. Model components A_4 and A_5 are duct assemblies and are shown in Figures 6 and 7. The A_4 and A_5 ducts differed only in the shape of the inlets. A_4 was designed for a Mach number, M_∞, of 1.5 and A_5 was

designed for $M_\infty = 2.0$. Moveable plugs, as shown in Figure 7, were placed at the aft ends of the ducts for both A_4 and A_5. By varying their location, the velocity in the ducts could be varied. An enlargement of the duct plug region is shown in Figure 8. The distance ℓ_p is defined as the duct plug position and during the testing values of ℓ_p = 0.81, 1.63, and 3.25 were used. Some testing was done with the plugs removed.

The inlet velocity was determined from pressure measurements made in the ducts. Pressure orifices were installed at fuselage station (FS) 24.68 as shown in the following sketch. Two total



pressures and three static pressures were measured in each duct. The static pressures and the total pressures in each duct were averaged and the following expression used to calculate the ratio of duct velocity to free-stream velocity. This assumes the total

$$\frac{V_{duct}}{V_\infty} = \left[\frac{1.0 - \left(\frac{p}{p_t}\right)_{duct}^{0.28571}}{1.0 - \left(\frac{p}{p_t}\right)_{\infty}^{0.28571}}\right]^{1/2}$$

temperature in the ducts to be equal to the tunnel total temperature. The nominal velocity ratios obtained as a function of plug position for the two Mach numbers are listed in the following table.

	INLET VELOCITY RATIO	
ℓ_p	$M_\infty = 1.5$	$M_\infty = 2.0$
0.81	0.40	0.41
1.63	0.81	0.94
3.25	0.81	0.94
Off	0.81	-

The parent aircraft model had provisions for mounting pylons on the fuselage centerline and left wing 1/3 semispan or 2/3 semispan positions. Figure 9 shows these positions. The centerline of the wing pylons is located on the 40 percent chord. The centerline of the fuselage pylon is located at fuselage station (FS) 19.42.

Two different pylon configurations were tested. The double-wedge pylon (P_2) shown in Figure 10 was tested at the three pylon positions. The model component designations are $(P_2)_C$, $(P_2)_{1/3}$, and $(P_2)_{2/3}$. These pylons are located as shown in Figure 9. The swept pylon (P_3) was tested only at the 1/3 semispan position, $(P_3)_{1/3}$. This pylon is shown in Figure 11.

Some tests were conducted with the triple ejector rack, T, shown in Figure 12 attached to $(P_2)_{1/3}$. When attached, the rack centerline shown in Figure 12 is aligned with the pylon centerline shown in Figure 10.

Dummy ogive-cylinder stores were used in conjunction with pylon $(P_2)_{1/3}$ and rack T. The store is shown in Figure 13. When attached to $(P_2)_{1/3}$, the store midpoint is aligned with the pylon centerline shown in Figure 10. When used with the rack T, the stores, S_{DOC2} and S_{DOC3}, were attached at the two shoulder locations with the midpoints aligned with the rack centerline shown in Figure 12.

The last model component used was a wedge-shaped fairing, F. Provisions were made for mounting this fairing on the bottom of model components A_3, A_4, or A_5. Figures 14 and 15 show the details and dimensions of the fairing and its location on the model.

4. TEST CONDITIONS

A summary of nominal test conditions and their uncertainties is presented by tunnel entry. Uncertainties in basic tunnel parameters p_o and T_o and a two sigma deviation in Mach number, determined from test section flow calibrations, were used to estimate uncertainties in the other free-stream properties using the Taylor series method of error propagation (Ref. 5).

4.1 Entry V41A-B4A

NOMINAL TEST CONDITIONS

M_∞	p_o, psia	T_o, °F	q_∞, psia	p_∞, psia	Re/ft x 10^{-6}
1.5	13.8	100	5.9	3.7	3.9
1.76*	14.9	↓	6.0	2.8	↓
2.0	16.4	↓	5.9	2.1	↓
2.5	20.9	↓	5.4	1.2	↓

*Probe calibrations only.

	UNCERTAINTY ($\pm$), PERCENT					
M_∞	M_∞	p_o	T_o	p_∞	q_∞	Re/ft
1.505	1.3	0.2	0.5	2.9	0.3	0.8
1.756	1.1			3.0	0.8	1.0
2.005	1.0				1.1	1.1
2.503	0.8				1.5	1.3

4.2 Entry V41A-L5A

NOMINAL TEST CONDITIONS

M_∞	p_o, psia	T_o, °F	q_∞, psia	p_∞, psia	Re/ft x 10^{-6}
1.5	14.8	120	6.4	4.0	4.1
2.0	17.3	120	6.2	2.2	4.0
2.5	21.9	120	5.6	1.3	4.0

	UNCERTAINTY ($\pm$), PERCENT					
M_∞	M_∞	p_o	T_o	p_∞	q_∞	Re/ft
1.50	1.3	0.20	0.5	2.9	0.3	0.8
2.00	1.0			3.0	1.1	1.1
2.50	0.8			3.0	1.5	1.3

4.3 Entry V41A-M9A

NOMINAL TEST CONDITIONS

M_∞	p_O, psia	T_O, $^\circ F$	q_∞, psia	p_∞, psia	Re/ft $\times 10^{-6}$
1.51	14.5	120	6.21	3.89	4.0
1.63*	18.8	↓	7.87	4.23	5.0
1.63*	14.0	↓	5.86	3.15	3.7
1.65**	18.8	↓	7.82	4.11	5.0
2.00	17.2	↓	6.16	2.20	4.0

*Nominal M_∞ = 1.60 Nozzle Contour

**Nominal M_∞ = 1.625 Nozzle Contour

		UNCERTAINTY ($\pm$), PERCENT					
M_∞	P_O	M_∞	P_O	T_O	p_∞	q_∞	Re/ft
1.51	14.5	1.7	0.2	0.5	3.6	0.4	0.9
1.63	18.8	1.0	↓	↓	3.0	0.6	↓
1.63	14.0	↓	↓	↓	↓	↓	↓
1.65	18.8	↓	↓	↓	↓	↓	↓
2.00	17.2	0.8	↓	↓	2.5	0.9	1.0

4.4 Entry V41A-T9A

NOMINAL TEST CONDITIONS

M_∞	p_O, psia	T_O, $^\circ F$	q_∞, psia	p_∞, psia	Re/ft $\times 10^{-6}$
1.51	14.5	120	6.21	3.89	4.0
2.00	17.2	↓	6.16	2.20	4.0
1.95	16.5	↓	6.07	2.28	3.9

		UNCERTAINTY (±), PERCENT					
M_∞	p_o	M_∞	P_o	T_o	p_∞	q_∞	Re/ft
1.51	14.5	1.7	0.2	0.5	3.6	0.4	0.9
2.00	17.2	0.8	↓	↓	2.5	0.9	1.0
1.95	16.5	0.8	↓	↓	2.5	0.9	1.0

4.5 Entry V41A-V6A

NOMINAL TEST CONDITIONS

M_∞	p_o, psia	T_o, °F	q_∞, psia	p_∞, psia	Re/ft $\times 10^{-6}$
1.51	14.5	120	6.21	3.89	4.0
1.63	14.2	↓	5.97	3.21	3.8
2.00	17.2	↓	6.16	2.20	4.0

		UNCERTAINTY (±), PERCENT			
M_∞	p_o	M_∞	p_∞	q_∞	Re/ft
1.51	14.5	1.7	3.6	0.4	0.9
1.63	14.2	1.0	3.0	0.6	0.9
2.00	17.2	0.8	2.5	0.9	1.0

5. FLOW-FIELD SURVEY TESTS

The flow-field data were taken with the flow-field rake, shown in Figure 16, attached to the CTS. The rake is made up of three 20° half angle conically tipped probes with four equally spaced static pressure orifices on the cone surface and a total pressure

orifice at the cone apex. The probes are spaced 1.5 inches apart, centerline to centerline.

The orientation of the rake in the tunnel is shown in Figure 17. It was always positioned in a vertical plane parallel with the plane of symmetry of the parent aircraft configuration. Nearly all of the data were taken with the probes at the same nominal angle of attack as the parent configuration. A limited amount of data were taken during entry V6A with the rake at a slightly larger angle of attack than the parent. This was done to alleviate clearance problems and allow data to be obtained closer to the parent aircraft.

The calibration of the three probes on the flow-field rake is described in Section 4.1 of Reference 1. The calibration described there is for the Mach number range from 1.25 to about 3.0. Since local Mach numbers in the flow field of the parent configuration less than 1.25 were expected, calibration data from Reference 8 were used to extend the data reduction procedure into the subsonic speed range. The data obtained during the present test program for use in calibrating the probes are described in Appendix A. The data reduction equations are presented in Section B.1 of Appendix B.

5.1 Summary of Tests

The flow-field survey data taken with a parent aircraft configuration present are summarized in Table I. Column 1 lists all of the parent configurations tested. The model component nomenclature was presented in Section 3.3. The second column of Table I gives the number of the table where all of the test conditions for that parent configuration are listed.

These tables, Table II through Table XXIII, all have the same format. Column 1 lists the Mach number, M_∞, and column 2 the angle of attack of the parent aircraft. Columns 3, 4, and 5 list the

coordinates of probe 1 of the points at which data were taken. The X_p, Y_p, Z_p coordinate system has its origin fixed in the nose of the parent configuration and is shown in Figure 18. Testing was done under the fuselage centerline, $Y_p = 0$, or under the left wing, negative Y_p. Column 6 only applies to parent configurations containing A_4 or A_5 and specifies the location of the duct plugs measured as shown in Figure 8. Columns 7 and 8 contain the AEDC test number and group number(s) which contain the data. Sometimes two group numbers were required to handle all of the data taken in the X_p traverse. These last two columns provide the input data to the data retrieval computer program.

5.2 Data Uncertainties

The cone probe pressures were measured with 15-psid transducers with a variable reference. The variable reference was also measured with another 15-psid transducer referenced to a near vacuum. These transducers were calibrated daily over a range of 0.3 to 12.0 psia using an air dead weight tester. Least squares straight line curve fits through these data points were used in determining a single scale factor for the 15-psid range of each transducer. The measurement precision is estimated to be 0.05 percent of reading.

This uncertainty in the pressure measurements was used to estimate the corresponding uncertainty that may exist in the cone probe calibration data and in the flow-field survey results presented in this report. The Taylor series method of error propagation was used in this analysis.

The following tables list the uncertainties for entries B4A and L5A.

PROBE PRESSURES

	Uncertainty (±), Percent			
M_∞	p	p/p_∞	p'_o	p/p'_o
1.51	0.05	3.0	0.1	0.3
1.76				0.3
2.01				0.4
2.50				0.5

LOCAL MACH NUMBER EVALUATIONS

	Uncertainty (±), Absolute	
M_∞	p/p'_o	M_ℓ
1.51	0.0012	0.004
1.76	0.0012	0.006
2.01	0.0012	0.006
2.50	0.0026	0.026

FLOW ANGULARITY PARAMETERS

	Uncertainty (±), Absolute		
M_∞	$\Delta p_{1,3}/\bar{p}$ and $\Delta p_{2,4}/\bar{p}$	$\eta/\bar{p}$	α_ℓ, σ_ℓ, deg
1.51	0.003	0.0003	0.2
1.76	0.003	0.0004	
2.01	0.004	0.0005	
2.50	0.006	0.0007	

The uncertainties for entries M9A, T9A, and V6A are now discussed. The uncertainty in local Mach number (M_ℓ) measured by the probes of the flow-field rake is believed to be about the same as the uncertainty in free-stream Mach number (M_∞) given in section 4. Uncertainty in local flow angles (α_ℓ and σ_ℓ) is estimated to be about $\pm 0.2^\circ$. The uncertainty in model pressures normalized by free-stream static pressure (p_∞) is the same as the uncertainty in p_∞ listed in Section 4.

5.3 Flow-Field Test Data Retrieval

Flow-field data from the first, second, fourth, and fifth entries (B4A, L5A, T9A, V6A) are recorded on two flow-field data tapes. AEDC was unable to provide a magnetic tape of the M9A data. This is unfortunate since the M9A flow-field data represented a substantial portion of the flow-field data that were taken during the five entries. The data have been written on the tapes in a standardized format so a single computer program could be written for data retrieval. This standardized format necessitated filling the space normally occupied by valid data with dummy values when data for a given entry was unavailable or did not apply to the configurations tested during a particular entry. These values have been set equal to zero.

5.3.1 Use of the computer program

A listing of the computer program used in retrieval of the flow-field data is presented in Appendix C. The input to the program consists of two cards both read under 16I5 format. Two values are entered on the first card in the first two 5-character fields. The first value is the number of groups of data to be retrieved. This value is limited to less than 17 solely because of the dimensioning of the variable F in the retrieval program. The second value on the first card is an integer designating which

entry the data are to be retrieved for (1 = B4A, 2 = L5A, 4 = T9A, 5 = V6A). The second card contains the group numbers of the data to be retrieved. This information is obtained from the tables described in Section 5.1.

The first tape upon which the data is written is a multi-file tape. The second tape consists of a single file. The first file on the first tape contains data from B4A. The second file on the first tape contains data from L5A and the third file on the first tape contains data from T9A. The first and only file on the second tape has the data from V6A. In order to get the proper data the tape must be positioned at the beginning of the file that contains the data for the entry in question; e.g., to retrieve data from entry T9A the first two files on the first tape must be skipped and the tape must be positioned at the beginning of the third file on the tape.

5.3.2 Description of tabulated data

There will be four or five pages of output for each group of data depending on whether or not the parent configuration had simulated engine inlets, model components A_4 or A_5; four pages for parent configurations without inlets and five pages if the parent configuration has engine inlets. Sample output for a configuration with inlets follows the program listing in Appendix C. The first line of each page tells the type of data, the entry number, the time period of the entry, and the AEDC document that pertains to the data being retrieved. The second line shows the group number and page number. The third line gives the tunnel operating conditions and the parent configuration code. The fourth line gives the angle of attack of the parent and the flow-field rake as well as the lateral and vertical locations of the flow-field rake. Also on the fourth line is information on the inlet plug position. These four lines of headings are printed on each

page. The reference pressure, the angle of attack of the rake, and the plug position information is valid only for the T9A and V6A entries.

Page 1 shows the longitudinal location of the probe closest to the parent and pressure information from all three probes. The assumption as to location of the point at which the flow field was measured changed between L5A and M9A. Originally, it was assumed that the flow field was being measured at the total pressure orifice. Later it was assumed that the flow field was being measured at the static pressure orifice. If the angle of attack of the parent and the probe are not identical, then the longitudinal location for each probe will be different. Page 2 contains data for the probe closest to the parent. Page 3 gives data for the middle probe, and page 4 gives data for the probe furthest from the parent. For entries T9A and V6A the engine inlet data is presented on the fifth page.

On pages 2 through 4, the local flow-field angle of attack (ALP and ALPL) is calculated two independent ways as is the local side-wash (SIG and SIGL). For entries B4A and L5A the values of ALP and SIG were calculated incorrectly, so those data should be ignored for those entries.

The data reduction equations are presented in Section B.2 of Appendix B. Some of the equations presented in Section B.1 are also used; e.g., ML_n.

The nomenclature used in the tabulated output is contained in the following table.

ALPHA (PAR)	Angle of attack of parent, deg
ALPHA (RAKE)	Mechanical angle of attack of the probe rake, deg
ALPn n = 1,2,3	Local flow-field angle of attack of the n^{th} probe based on DP13, deg
ALPLn n = 1,2,3	Local flow-field angle of attack of the n^{th} probe in X_p - Z_p plane, deg (see Fig. 18); positive for positive w
ALTn n = 1,2,3	Total angle of attack of the n^{th} probe, deg
CONF (PAR)	Parent model configuration code
DP13/PBn n = 1,2,3	Pressure differential in pitch plane of the n^{th} probe normalized by average cone surface pressure
DP24/PBn n = 1,2,3	Pressure differential in yaw plane of the n^{th} probe normalized by average cone surface pressure
DVn/V8 n = 1,2,3	Normalized incremental change in local velocity of the n^{th} probe relative to free-stream velocity
GROUP	Data group number

LP	Inlet plug position aft of fully closed, in.
MACH	Free-stream Mach number
MLn n = 1,2,3	Local Mach number of the n^{th} probe, MLn = F(PBn/Pn5)
(P/PT)R or L	Inlet average static pressure normalized by inlet average total pressure for the right or left inlet, respectively
PBn/P8 n = 1,2,3	Average cone surface pressure of the n^{th} probe normalized by free-stream static pressure
Pn5/PBn n = 1,2,3	Cone pitot pressure of the n^{th} probe normalized by average cone surface pressure
PHIn n = 1,2,3	Probe total angle of roll as sensed by the n^{th} probe, deg
PLi i = 3,4,5	Static pressures measured in the left inlet, psia
PO, PSIA	Free-stream stagnation pressure, psia
PRi i = 3,4,5	Static pressures measured in the right inlet, psia
PREF, PSIA	Reference pressure for probe pressures, psia
PTLi i = 1,2	Total pressures measured in the left inlet, psia
PTRi i = 1,2	Total pressures measured in the right inlet, psia

PTn/PBn n = 1,2,3	Interpolation or extrapolation of Pn5/PBn of the n^{th} probe to obtain a value at the same axial location as the probe reference point (℄ of static taps)
P8, PSIA	Free-stream static pressure, psia
Q8, PSIA	Free-stream dynamic pressure, psia
QLn/Q8 n = 1,2,3	Local stream dynamic pressure of the n^{th} probe normalized by free-stream dynamic pressure
RE/FT*10**6	Free-stream Reynolds number x 10^{-6} per ft, ft^{-1}
SIGn n = 1,2,3	Local sidewash angle of the n^{th} probe based on DP24, deg
SIGLn n = 1,2,3	Local sidewash angle of the n^{th} probe in X_p - Y_p plane, deg (see Fig. 18); positive for positive v
TO, DEG (R)	Free-stream stagnation temperature, ^oR
T8, DEG (R)	Free-stream static temperature, ^oR
Un/V8 n = 1,2,3	Local u velocity determined by the n^{th} probe normalized by V8 (see Fig. 18)
(V/V8)R or L	Inlet flow velocity normalized by free-stream velocity for the right or left inlet, respectively, based on (P/PT)R or L
Vn/V8 n = 1,2,3	Local v velocity determined by the n^{th} probe normalized by V8 (see Fig. 18)

V8, FT/SEC — Free-stream velocity, ft/sec

Wn/V8 n = 1,2,3 — Local w velocity determined by the n^{th} probe normalized by V8 (see Fig. 18)

Xn(IN) n = 1,2,3 — Axial location X_p of the n^{th} probe reference point (probe tip for B4A and L5A; ℄ of static taps for M9A, T9A, and V6A) relative to the parent reference point (nose), in.

Y1 (IN) — Lateral location Y_p of all probe reference points (probe longitudinal ℄) relative to the parent reference point (longitudinal ℄), in.

Zn(IN) n = 1,2,3 — Vertical location Z_p of the n^{th} probe reference point (probe longitudinal ℄ at static tap ℄) relative to the parent reference point (longitudinal ℄), in.

6. PRESSURE DISTRIBUTION TESTS

Pressure distribution data were obtained from the first, third, fourth, and fifth entries (B4A, M9A, T9A, and V6A). No pressure distribution data were taken during the second entry (L5A). Pressure distributions measured during B4A, M9A, and T9A were on the finless ogive-cylinder store, S_P, shown in Figure 19. Longitudinal pressure variations were obtained by virtue of 19 pressure orifices located along one meridian of the store. Circumferential pressure distributions were obtained by rolling the store about its longitudinal axis through 360° in increments of 10°. Longitudinal loading distributions were obtained by integrating the circumferential pressure distributions. Store loads were obtained by longitudinal integration of the loading distributions. The moment reference location is shown in Figure 19. The equations used in the integrations are presented in Section B.3 of Appendix B.

During the V6A entry, a finless store with an elliptical cross section, S_{EP}, was tested. There were two store pressure models which made up S_{EP}. Both were 2:1 ellipses at all longitudinal stations, see Figure 20. Figure 20(a) shows S_{EP1} and Figure 20(b) shows S_{EP2W}. During the V6A tests, the wings were removed and the store designated S_{EP2}. Each model has two longitudinal rows of pressure orifices, taps 1 through 29. Taps 30 through 33 on one model matched locations on the other model and provided redundant measurements for comparison. At a specific position or attitude in the stream or interference flow field, four groups of pressure data were combined to describe the surface pressure distribution on the model. This provided data at eight circumferential positions at each of 14 axial stations. For example, when S_{EP1} was at 0° roll, pressure data were obtained at two circumferential positions, 0° and 270°, at each of the 14 axial stations. By rolling S_{EP1} 180° data were obtained at 90° and 180°. S_{EP2} is next positioned at the same place and attitude in the free-stream or interference flow field as S_{EP1} was for the previously described two groups of data. With S_{EP2} at 0° roll data are obtained at 55° and 305°. Next, S_{EP2} is rolled 180° to obtain data at 125° and 235°. If a measured pressure was found to be incorrect because of a leak or restriction in the pressure tube or noise in the transducer signal, the value of the pressure was set to zero. During the pressure integrations linear interpolation in the longitudinal direction was used to determine a value for pressures that had been zeroed.

The pressure integrations were performed, as for the ogive-cylinder store, to obtain longitudinal loading distributions and the overall store loads. The equations used are presented in Section B.4 of Appendix B. Since only eight pressures were measured at each longitudinal station, the authors recommend that the results of these integrations be used with extreme caution.

6.1 Summary of Tests

6.1.1 Ogive-cylinder store

The pressure distribution data taken on the ogive-cylinder store are summarized in Table XXIV. Column 1 lists all of the parent configurations tested. The model nomenclature was presented in Section 3.3. The second column of Table XXIV gives the number of the table where all of the test conditions for that parent configuration are listed.

These tables, Tables XXV through XXXVII, all have the same format. Column 1 lists the Mach number. Column 2 gives the parent configuration angle of attack, α_P, and columns 3 and 4 list the store angle of attack, α_s, and yaw angle, β_s. Positive β_s is nose toward the parent when under the left wing.

The next three columns specify the store position. Column 6 gives the Y_P location of the store moment center. Columns 5 and 7 specify the X_P and Z_P coordinates of the store moment center relative to the carriage position on a pylon or the TER rack. The carriage position at the three pylon locations is shown in Figure 9. The X_P and Z_P coordinates of the moment center for $\Delta X_P = \Delta Z_P = 0$ for the various Y_P locations used are

Y_P, in.	X_P, in.	Z_P, in.
0.0	-19.42	2.82
-4.0	-20.84	1.37
-4.75	-20.84	1.37
-8.0	-24.52	1.30

With the TER, model component T, attached to $(P_2)_{1/3}$ at Y_P = -4.0 inches

$$X_P = -20.84 \text{ in.}$$
$$Z_P = 2.08 \text{ in.}$$

Column 8 only applies to parent configurations containing A_4 or A_5 and specifies the location of the duct plugs measured as shown in Figure 8. Columns 9 and 10 list the AEDC test number and group number which contains the data for each test condition. These columns provide the input data to the data retrieval computer program.

6.1.2 Elliptic store

The pressure distribution data taken on the elliptic store are summarized in Table XXXVIII in the same manner as was used for the ogive-cylinder store. The test conditions for the various parent configurations are presented in Tables XXXIX through XLVII.

Table XXXIX lists the store free-stream, or store alone, data. Tables XL through XLVII list the test conditions with various parent configurations present. Columns 1 through 9 of Tables XL through XLVII present the same information as was previously described for the ogive-cylinder store. The following table lists by table number the X_P and Z_P coordinates of the moment center, see Figure 20(a), for $\Delta X_P = \Delta Z_P = 0$.

Table No.	X_P, in.	Z_P, in.
XL	-18.34	2.82
XLI	-19.76	1.37
XLII	-22.00	2.43
XLIII	-18.34	2.82
XLIV	-22.00	2.43
XLV	-22.00	2.43
XLVI	-18.34	2.82
XLVII	-22.00	2.43

The four columns following column 9 list the four AEDC group numbers which contain the pressure data taken on the two pressure models at the two roll attitudes. The $\phi = 0^o$ roll orientation of the two stores will now be defined. Figure 21 shows an X,Y,Z coordinate system with its origin at the store moment center. When the store is oriented such that $\alpha_s = \alpha_p$ and $\beta_s = 0$, the system is parallel to the X_p, Y_p, Z_p system shown in Figure 18. The zero degrees roll orientation, $\phi = 0^o$, for the elliptic stores (see Fig. 20) puts the major axis of the ellipse in the Z = 0 plane. For pressure model S_{EP1} orifices 16 through 29 are on the side closest to the parent aircraft. For pressure store S_{EP2} orifices 1 through 29 are on the side closest to the parent aircraft.

The free-stream elliptic store test conditions are listed in Table XXXIX. The combined angle of attack of the store, α_{c_s}, is listed in column 2 and the store roll angle, ϕ_s, in column 3. The $\phi_s = 0^o$ orientation has the major axis of the ellipse horizontal in the wind tunnel. In this orientation orifices 16 through 29 on S_{EP1} and orifices 1 through 29 on S_{EP2} are on the leeward side at positive α_{c_s}. Positive ϕ_s is a clockwise rotation of the model when viewed from the rear.

The last column of Tables XXXIX through XLVII lists the group number containing the longitudinal load distributions and total loads calculated by integrating the pressure distributions. The last five columns of these tables provide the input data to the data retrieval computer programs.

6.2 Data Uncertainties

The uncertainties in the pressures measured on the model are the same as those given in Section 5.2 for the flow-field rake. The ogive-cylinder store was tested during entries B4A, M9A, and T9A. The elliptic store was used only during entry V6A.

It is difficult to establish a percentage uncertainty for the loading distributions and the overall loads which were determined by integration of the pressure distributions. One statement that can be made is that the results for the ogive-cylinder store should be much more accurate than those obtained for the elliptic store. The elliptic store only had eight circumferential pressures at a given axial location while the other had 36. The elliptic store data should be used with extreme caution.

6.3 Pressure Test Data Retrieval

Due to the fact that one group of data defined the axial and circumferential pressure distribution for the ogive-cylinder store while four groups were needed to perform the same task for the elliptical store, three separate computer programs are required for data retrieval. Program PDCYL retrieves data for the ogive-cylinder store. Program PDE retrieves the pressure distribution data for the elliptical store, while program PDEI is used to retrieve the integrated pressure data for the elliptical store. The information on the magnetic tape is contained on five files. The first three files contain the data from B4A, M9A, and T9A, respectively. The fourth file has the pressure distribution data from V6A, and the fifth file has the pressure integration results from V6A.

6.3.1 Use of the computer programs

Listings of the computer programs used to retrieve the data are contained in Appendix D. The input to all three programs is similar. Two cards of input are required for each program. These cards are read under 16I5 format. Two values are read from the first card. The first value is the number of groups of data to be retrieved. The second value is the entry number (1 = B4A, 3 = M9A, 4 = T9A, 5 = V6A). The entry number is optional for the elliptical store data (V6A). These two values are entered in the first two

5-character fields. The second card contains the group numbers (<17) of the data to be retrieved. This information is obtained from the tables described in Section 6.1. As discussed earlier the tape is a multi-file tape and must be positioned at the beginning of the proper file in order to get the desired data.

6.3.2 Description of tabulated data

6.3.2.1 Ogive-cylinder store.- For the ogive-cylinder store the data for each group require three pages of output. A sample follows the listing of program PDCYL in Appendix D. The first line of output on each page tells the type of data, the entry number, the time period of the entry, and the applicable AEDC document. The next line gives the group number and page number of this group. The third line gives the tunnel operating conditions and the fourth line gives the parent and store configurations. The information on the parent configuration was only available for the T9A entry as was the information on the fifth line designated LP. Also on line five is the parent and store angles of attack and store position. These first five lines are repeated on all three pages of output for each group. Pages one and two contain the pressure data as a function of roll attitude and axial location. The 0° roll attitude places the orifices on the top of the store. Positive roll is clockwise viewed from the rear. Page three gives the distributed and total loads derived from pressure integrations. The directions of positive forces and moments are shown in Figure 21.

The nomenclature used in the tabulated output is contained in the following table.

ALPHA (PAR)	Angle of attack of parent, deg
ALPHA (STORE)	Angle of attack of CTS pressure model, deg

CA1	Axial-force coefficient (axial integration), Force/(Q8 · S)
CA2	Axial-force coefficient (radial integration), Force/(Q8 · S)
CLN	Resultant yawing-moment coefficient, CLN = CLNA + CLNY
CLNA	Yawing-moment coefficient due to axial force loading, yawing moment/(Q8 · S · L)
CLNY	Yawing-moment coefficient due to side force loading, yawing moment/(Q8 · S · L)
CLN/CY	Ratio of CLNY to CY
CM	Resultant pitching-moment coefficient, CM = CMA + CMN
CMA	Pitching-moment coefficient due to axial force distribution, pitching moment/(Q8 · S · L)
CMN	Pitching-moment coefficient due to normal force loading, pitching moment/(Q8 · S · L)
CM/CN	Ratio of CMN to CN
CN	Normal-force coefficient, normal force/(Q8 · S)
CONF (PAR)	Parent model configuration code
CY	Side-force coefficient, side force/(Q8 · S)

DX,DY,DZ	Coordinate of store model reference point (midpoint of store model ℄) relative to store reference point in its carriage position in the X_p, Y_p, and Z_p directions, positive upstream, out the right wing, and away from the parent model, respectively, in.
GROUP	Data group number
L,ℓ	Moment coefficient reference length, ℓ = 0.75 in.
LCA	Local axial-force coefficient per unit length, in^{-1} [local axial force/(Q8 · S)]
LCLN	Local yawing-moment coefficient per unit length, in^{-1} [local yawing moment/(Q8 · S · L)]
LCM	Local pitching-moment coefficient per unit length, in^{-1} [local pitching moment/(Q8 · S · L)]
LCN	Local normal-force coefficient per unit length, in^{-1} [local normal force/(Q8 · S)]
LCY	Local side-force coefficient per unit length, in^{-1} [local side force/(Q8 · S)]
LP	Inlet plug position measured from the fully closed position, in.
MACH	Free-stream Mach number
Pn/P8 n = 1-19	Pressure as sensed by the nth tap normalized by free-stream static pressure

PHI	Store model roll angle, deg
PO, PSIA	Free-stream stagnation pressure, psia
PREF, PSIA	Reference pressure, psia
P8, PSIA	Free-stream static pressure, psia
Q8, PSIA	Free-stream dynamic pressure, psia
RE/FT*10**6	Free-stream Reynolds number x 10^{-6}, ft^{-1}
S	Force and moment coefficient reference area, $in.^2$ ($S = 0.4418$ $in.^2$)
TO, DEG (R)	Free-stream stagnation temperature, ^{o}R
T8, DEG (R)	Free-stream static temperature, ^{o}R
V8, FT/SEC	Free-stream velocity, ft/sec
X/L	Distance from the store body nose to the surface pressure tap normalized by the store body length (L = 6.375 in.)

6.3.2.2 Elliptic store.- The fourth file on the pressure tape contains the pressure data taken with the elliptical store during the V6A entry. The fifth file contains the integrated pressure data from V6A. The authors recommend that the integrated loads from V6A be used with extreme caution. It is felt that the 8 circumferential pressures at 14 axial stations are insufficient to define the store loading at all test conditions. Each group of pressure data is presented on one page of output. A sample follows the listing of program PDE in Appendix D. The first line gives the type of data,

the entry number, the time period of the entry, and the pertinent AEDC document. The next four lines give the group number, tunnel operating conditions, parent and store configurations, and the location and orientation of the store model. This information is followed by the data.

The following table presents the nomenclature used in the tabulated output.

ALPHA (PAR)	Parent model angle of attack, deg
ALPHA (STORE)	Pressure-distribution store model angle of attack, deg
CONF (PAR)	Parent model configuration code
CONF (STORE)	Store model configuration, SEP1 or SEP2
DX,DY,DZ	Displacement of the store moment center from the reference point in the X_P, Y_P, and Z_P directions, positive upstream, out the right wing and away from the parent model, respectively, in.
GROUP	Data group numbers
LP	Inlet plug position measured from the fully closed position, in.
MACH	Tunnel free-stream Mach number
MODEL TAP	Number associated with each pressure measuring tap on the store model, (see Fig. 20)

P	Value of the pressure from a specific model tap, psia
P/P8	Model pressure referenced to free-stream static pressure
PHI (STORE)	Store model roll angle used to get two rays of pressure distributions at one DX, DY, DX, ALPHA (STORE), YAW (STORE), and PHI position, deg (see Fig. 20)
PO	Tunnel stilling chamber pressure, psia
PREF	Reference pressure on the scanivalve transducer, psia
P8	Tunnel free-stream static pressure, psia
Q8	Tunnel free-stream dynamic pressure, psia
RE/FT*10**6	Tunnel free-stream Reynolds number $\times 10^{-6}$, ft^{-1}
TO	Tunnel stilling chamber temperature, ^{o}R
T8	Tunnel free-stream static temperature, ^{o}R
V8	Tunnel free-stream velocity, ft/sec
X/L	Store model tap location from the model nose normalized by the model length (L = 6.0 in.)
YAW (STORE)	Pressure-distribution store model yaw angle, deg

Each group of integrated pressure data is presented on one page of output. A sample follows the listing of program PDEI in Appendix D. The top of the page presents the same information as was listed for the pressure data. Following this the pressures used in the integrations are listed as a function of axial location, X/L, and polar angle, PHI(RAY). PHI(RAY) = 0.0 is on the top of the store and PHI is positive clockwise around the store when viewed from the rear. After the pressures the loading distributions and total loads are listed. The last line lists the pressure data group numbers which contained the data used in the integrations.

The nomenclature used in the tabulated output is defined in the following list.

ALPHA (PAR)	Parent model angle of attack, deg
ALPHA (STORE)	Pressure-distribution store model angle of attack, deg
CA	Axial-force coefficient (axial integration uncorrected for base pressure), axial force/(Q8 · S)
CN	Normal-force coefficient, normal force/(Q8 · S)
CLM	Pitching-moment coefficient, pitching moment/(Q8 · S · L)
CLN	Yawing-moment coefficient, yawing moment/(Q8 · S · L)
CY	Side-force coefficient, side force/(Q8 · S)

DCA/DX	Local axial-force coefficient, $in.^{-1}$ [local axial force/(Q8 · S)]
DCLM/DX	Local pitching-moment coefficient, $in.^{-1}$ [local pitching moment/(Q8 · S · L)]
DCLN/DX	Local yawing-moment coefficient, $in.^{-1}$ [local yawing moment/(Q8 · S · L)]
DCN/DX	Local normal-force coefficient, $in.^{-1}$ [local normal force/(Q8 · S)]
DCY/DX	Local side-force coefficient, $in.^{-1}$ [local side force/(Q8 · S)]
DX,DY,DZ	Displacement of the store moment center from the reference point in the X_P, Y_P, and Z_P directions, positive upstream, out the right wing and away from the parent model, respectively, in.
GROUP	Data group number
L	Moment coefficient reference length, L = 1.061 in.
LP	Inlet plug position measured from the fully closed position, in.
MACH	Tunnel free-stream Mach number
PARENT CONFIG	Parent model configuration
PHI	Pressure distribution store model true roll angle, deg

PHI (RAY)	Circumferential roll positions of rays of pressure measurements, deg
PO	Tunnel stilling chamber pressure, psia
P/P8	Model pressure referenced to free-stream static pressure
P8	Tunnel free-stream static pressure, psia
Q8	Tunnel free-stream dynamic pressure, psia
RE/FT*10**6	Tunnel free-stream Reynolds number $\times 10^{-6}$, ft^{-1}
S	Force and moment coefficient reference area, ($S = 0.884$ in.^{2})
TO	Tunnel stilling chamber temperature, $^{\circ}R$
T8	Tunnel free-stream static temperature, $^{\circ}R$
V8	Tunnel free-stream velocity, ft/sec
X/L	Store model tap location from the model nose normalized by the model length (L = 6.0 in.)
YAW (STORE)	Pressure-distribution store model yaw angle, deg

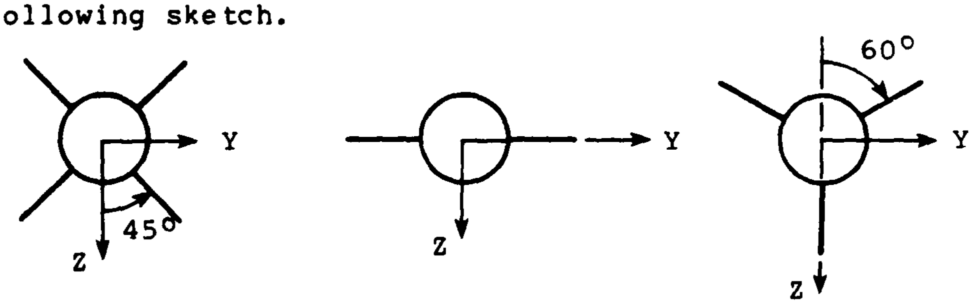
7. FORCE AND MOMENT TESTS

The force phase of the test consisted of taking six-component force and moment data on several different store models. Data

were taken in a grid pattern in the flow field of the generalized fighter-bomber aircraft. The grid data were taken as the parent aircraft was built up from a simple ogive-cylinder fuselage with mid wing to a realistic fighter-bomber aircraft with noncircular cross section including flow through inlets. Store models were tested on pylons under the fuselage and wing. Free-stream forces and moments were also measured for all of the store configurations.

The store models used during the test program are shown in Figures 22 and 23. Figure 22 shows a series of ogive-cylinder stores. All of the store bodies are identical. A finless model, S_{LFN}, is shown in Figure 22(a). Two models with cruciform fins are shown in Figures 22(b) and 22(c). Store S_{LFF} was used during entries B4A and L5A. Store S_{COC} was used during the last three entries, M9A, T9A, and V6A. Planar, S_{POC}, and triform, S_{TOC}, versions of S_{COC} are shown in Figures 22(d) and 22(e).

The store coordinate system is shown in Figure 21 along with the positive sense of the force and moment coefficients. The system has its origin at the store moment center (moment reference location). In the carriage or zero point location, the store X,Y,Z system is parallel to the parent aircraft X_P, Y_P, Z_P system shown in Figure 18. The orientations of the fins on the finned stores when in the carriage positions, viewed from the rear, are shown in the following sketch.



The sixth store, S_E, used in the test program is shown in Figure 23. It consists of a body which is a 2 to 1 ellipse, a monoplane wing, and an interdigitated cruciform tail. In the carriage position the wing is in the Z = 0 plane.

7.1 Summary of Tests

The force and moment tests are summarized in Table XLVIII. Column 1 lists the store tested and column 2 gives the table number where all of the parent aircraft configurations used with that store are listed as are the test conditions. All of the isolated store data (no parent configuration present) have been grouped together in Table XLIX.

The data obtained on the various stores shown in Figures 22 and 23 in the presence of various parent aircraft configurations are listed in Tables L through LV. The first item listed is the parent configuration (the model nomenclature was presented in Section 3.3). The next four columns list the Mach number, M_∞, the parent aircraft angle of attack, α_P, the store angle of attack, α_S, and the store yaw angle, β_S. Positive β_S is nose to the right viewed from the rear. Column 8 lists the CTS zero point, or reference point, from which ΔX_P, ΔY_P, and ΔZ_P given in columns 9 through 11 are measured.

The zero points are listed in Table LVI. Column 1 lists the zero point number and the second column defines the store location. The last column gives the coordinates of the store moment reference point (moment center) in the X_P, Y_P, Z_P system shown in Figure 18 when $\Delta X_P = \Delta Y_P = \Delta Z_P = 0$.

Column 12 in Tables L through LV gives the duct plug location and is only applicable to parent configurations containing A_4 or A_5. Columns 13 and 14 list the AEDC test number and group number which contains the data. These last two columns provide the input data to the data retrieval computer program.

For each "group" of data listed in Tables L through LV one of the following three parameters, ΔZ_P, α_S, or β_S, is designated

with a two letter identifier. For a particular group, that is the quantity which was varied. The values of these quantities used for the various two letter designations are listed in Tables LVII through LIX.

Table XLIX lists the isolated store data. Column 1 gives the store designation and column 2 lists the Mach number, M_∞. The third column gives the store roll angle, ϕ_s, measured relative to the fin orientation on the balance. Positive ϕ_s is clockwise when viewed from the rear. Columns 4 and 5 give the store angles of attack and yaw. The values associated with the two letter identifiers are listed in Tables LVIII and LIX. When $\phi_s \neq 0^\circ$ and $\beta_s = 0^\circ$, α_s is the total or combined angle of attack, the angle between the store longitudinal axis and the free-stream velocity vector.

For some tests with store S_{COC}, the store location in the wind tunnel was varied. Columns 6 through 8 give the X_T, Y_T, Z_T tunnel coordinates. With $Y_T = Z_T = 0$ the store is on the tunnel center-line. The $X_T = 0$ location is defined in Reference 5. The values of Z_T used when Z_T is specified as AZT are given in Table LX.

The last two columns of Table XLIX give the test number and group number containing the data. These are input to the data retrieval computer program.

7.2 Balance and Associated Data Uncertainties

Model forces and moments were measured with six-component, moment type, strain-gage balances calibrated by VKF personnel. Prior to the test, static loads in each plane and combined static loads were applied to the balance to simulate the range of loads and center of pressure locations anticipated during the test. The uncertainties presented here represent the bands which enclose 95 percent of the measured residuals, based on differences between the

applied loads and the corresponding values calculated from the balance calibration equations included in the final data reduction.

Balance and base pressure uncertainties were combined with uncertainties in the tunnel parameters, using the Taylor series method of error propagation, to estimate the uncertainty of the aerodynamic coefficients which are presented below. They are taken from References 1 through 5.

For entries M9A, T9A, and V6A the basic precision of the aerodynamic coefficients was also computed using only the balance and base pressure uncertainties along with the nominal test conditions, using the assumption that the free-stream flow non-uniformity is a bias type of uncertainty which is constant for all test runs. These values therefore represent the data repeatability expected and are especially useful for detailed discrimination purposes in parametric model studies.

V41A-B4A

PWT Balance Number 6-.40-.010-.40M-G

Component	Balance Design Loads	Calibration Load Range	Range of Check Loads	Measurement Uncertainty
Normal Force, lb	10	4	±2.5	±0.025
Pitching Moment,* in.-lb	20	10	±1.6	±0.050
Side Force, lb	10	4	±1.0	±0.025
Yawing Moment,* in.-lb	20	10	±0.6	±0.050
Rolling Moment, in.-lb	2.25	0.9	±0.45	±0.006
Axial Force, lb	6	3	0-1.5	±0.015

*About balance forward moment bridge.

Absolute Uncertainty

Near Balance Minimum Load, ±, (Body Axes)

M_∞	C_N	C_m	C_Y	C_n	C_ℓ	C_A	C_{A_t}
1.51	0.010	0.028	0.010	0.028	0.006	0.016	0.006
2.01	0.010	0.028	0.010	0.028	0.006	0.016	0.006
2.50	0.010	0.028	0.010	0.028	0.006	0.016	0.006

V41A-L5A

PWT Balance Number 6-.40-.010-.40M4

Component	Balance Design Loads	Calibration Load Range	Range of Check Loads	Measurement Uncertainty
Normal Force, lb	10	4	±2.5	±0.050
Pitching Moment,* in.-lb	20	10	±1.6	±0.100
Side Force, lb	10	4	±1.0	±0.050
Yawing Moment.* in.-lb	20	10	±0.6	±0.100
Rolling Moment, in.-lb	2.25	0.9	±0.45	±0.011
Axial Force, lb	6	3	0-1.5	±0.03

*About balance forward moment bridge.

Uncertainty (±) at Maximum

Measured Coefficient Value, Percent (Body Axes)

M_∞	C_N	C_m	C_Y	C_n	C_ℓ*	C_A	C_{A_t}
2.00	0.48	0.42	1.3	1.2	---	1.3	0.52
2.50	0.50	0.45	2.0	1.2	---	1.0	0.60

*Because of the low loads, use the "Absolute Uncertainty" value on the following page.

Absolute Uncertainty

Near Balance Minimum Load, $\pm$, (Body Axes)

M_∞	C_N	C_m	C_Y	C_n	C_ℓ	C_A	C_{A_t}
2.00	0.0012	0.013	0.0012	0.0057	0.0028	0.0043	0.0019
2.50	0.0013	0.010	0.0013	0.0059	0.0030	0.0034	0.0021

V41A-M9A

PWT Balance Number 6-.4-.020-.4M"C"

Component	Balance Design Loads	Calibration Load Range	Range of Check Loads	Measurement Uncertainty
Normal Force, lb	20	20	± 8.0	± 0.05
Pitching Moment,* in.-lb	40	40	± 0.45	± 0.08
Side Force, lb	20	20	± 3.0	± 0.05
Yawing Moment,* in.-lb	40	40	± 0.16	± 0.08
Rolling Moment, in.-lb	6	6	± 0.5	± 0.02
Axial Force, lb	6	6	0-5.0	± 0.03

*About balance forward moment bridge.

Uncertainty

Measured Coefficient Value, $\pm$ Percent

M_∞	C_N	C_m	C_Y	C_n	C_{A_t}	C_A
1.63	0.71	0.86	1.00	1.10	1.15	2.94

Repeatability (±)

Measured Coefficient Value

M_∞	C_N	C_m	C_Y	C_n	C_ℓ	C_{A_t}	C_A
1.63	0.014	0.031	0.014	0.031	0.008	0.009	0.010

V41A-T9A

PWT Balance Number 6-.4-.020-.4M"C"

Component	Balance Design Loads	Calibration Load Range	Range of Check Loads	Measurement Uncertainty
Normal Force, lb	20	20	±10.0	±0.05
Pitching Moment,* in.-lb	40	40	±10.0	±0.10
Side Force, lb	20	20	±5.0	±0.05
Yawing Moment,* in.-lb	40	40	±5.0	±0.10
Rolling Moment, in.-lb	6	6	±0.5	±0.02
Axial Force, lb	6	6	0-5.0	±0.06

*About balance forward moment bridge.

Uncertainty

Measured Coefficient Value, ± Percent

M_∞	C_N	C_m	C_Y	C_n	C_{A_t}	C_A
1.51	0.45	1.00	0.46	1.10	2.31	4.85
2.00	0.95	1.35	0.95	1.35	2.84	4.18

Repeatability (±)

Measured Coefficient Value

C_N	C_m	C_Y	C_n	C_ℓ	C_{A_t}	C_A
0.019	0.068	0.019	0.068	0.010	0.022	0.023

V41A-V6A

VKF Balance Number 4.00-Y-36-064

Component	Balance Design Loads	Calibration Load Range	Range of Check Loads	Measurement Uncertainty
Normal Force, lb	25	25	±20.0	±0.06
Pitching Moment,* in.-lb	52	52	±20.0	±0.13
Side Force, lb	25	25	±16.0	±0.06
Yawing Moment,* in.-lb	52	52	±32.0	±0.13
Rolling Moment, in.-lb	8	8	±6.0	±0.02
Axial Force, lb	8	8	0-5.0	±0.04

*About balance forward moment bridge.

Maximum Coefficient Uncertainty, ± Percent

M_∞	Store Model	C_N	C_m	C_Y	C_n	C_{A_t}	C_A
1.51	S_E	0.48	1.13	0.61	1.26	0.95	4.65
1.51	S_{TOC}	0.51	1.11	0.54	1.14	1.60	4.36
1.63	S_{COC}	1.40	2.62	1.90	3.39	2.53	5.05
2.00	S_E	0.97	1.45	1.04	1.70	1.36	3.15

Repeatability (±)
Measured Coefficient Value

Store Model	C_N	C_m	C_Y	C_n	C_ℓ	C_{A_t}	C_A
S_E	0.023	0.045	0.023	0.045	0.007	0.007	0.008
S_{TOC}, S_{COC}	0.046	0.157	0.046	0.157	0.019	0.015	0.016

7.3 Force and Moment Test Data Retrieval

All the force and moment data for the five tunnel entries have been collected and stored on a magnetic tape. The data have been written on the tape in a standardized format so that one program could be written to retrieve data from all five entries. This necessitated filling the space normally occupied by valid data with dummy values when data for a given entry were unavailable or did not apply to configurations tested during a particular entry. These values have been set equal to zero. The values for PARENT CONFIG, STORE CONFIG, LP, and PB(2) are only meaningful for the T9A and V6A entries. Consequently these values have been set to zero for the B4A, L5A, and M9A entries.

7.3.1 Use of the computer program

A listing of the computer program used in retrieval of force data is given in Appendix E. The input to the program consists of two cards both read under 16I5 format. The first card contains two values in the first two fields of 5 characters. The first value is the number of groups of data to be retrieved. This value is limited to less than 17 solely because of the dimensioning of variable D in the program. The second value on the first card is an integer designating which entry the data to be retrieved is from (1 = B4A, 2 = L5A, 3 = M9A, 4 = T9A, 5 = V6A). The second card contains the group numbers of the data to be retrieved. This information is obtained from the tables described in Section 7.1.

The tape upon which the data are written is a multi-file tape. The file number corresponds to the integer designation of the entry, i.e., the second value on the first card of input to the retrieval program. In order to get the proper data, the tape must be positioned at the beginning of the file that contains the data for the entry in question; e.g., to retrieve data from M9A the

first two files on the tape must be skipped and the tape must be positioned at the beginning of the third file on the data tape.

7.3.2 Description of tabulated data

There is one page of output for each group of data. Samples for the five tunnel entries are presented in Appendix E following the program listing. The first line of output identifies the type of data, in this case force; the AEDC entry code, e.g., V41A-B4A; the time period during which the data were taken; and the AEDC document which is pertinent to the test, e.g., AEDC-TSR-78-V2. The second line lists the group number, the tunnel operating conditions, and the store roll relative to the reference position. The third line specifies the parent configuration and its angle of attack. The last line of heading information lists the store configuration and the duct plug position, LP. LP = ***** indicates that the inlets were not on the parent model for this group of data.

After the four lines of heading information, the data are tabulated. The store coordinate system and the positive sense of the forces and moments measured in this coordinate system are shown in Figure 21. As the store pitches, yaws, and rolls, the coordinate system moves with the store.

The nomenclature used in the tabulated output is contained in the followng table.

AB	Store model base area (0.4418 in^2 for stores with circular cross sections, 0.884 in^2 for stores with elliptical cross sections)
ALPHA	Store model angle of attack, positive is nose up as seen by the pilot or in the free-stream nose to the top of the tunnel, deg

ALPHA(PAR)	Parent model angle of attack, positive is nose up as seen by the pilot, deg
CA, C_A	Axial-force coefficient corrected for base pressure, CAT + CPB • AB/S
CAT	Axial-force coefficient uncorrected for base pressure, uncorrected axial force/(Q8 • S)
CLL, C_ℓ	Rolling-moment coefficient, rolling moment/(Q8 • S • L)
CLM, C_m	Pitching-moment coefficient, pitching moment/(Q8 • S • L)
CLM/CN, C_m/C_N	Pitching-moment coefficient divided by normal-force coefficient; center of pressure location from model moment reference point normalized by L
CLN, C_n	Yawing-moment coefficient, yawing moment/(Q8 • S • L)
CN, C_N	Normal-force coefficient, normal force/(Q8 • S)
CPB	Base-pressure coefficient, (PB/P8 - 1.0) • P8/Q8
CY, C_Y	Side-force coefficient, side force/(Q8 • S)
DX	Longitudinal separation distance from the store carriage position, positive is upstream, in.
DY	Lateral separation distance from the store carriage position, positive is right as seen by the pilot, in.

DZ	Vertical separation distance from the store carriage position, positive is down as seen by the pilot, in.
GROUP	Number associated with a group of data points that have one position variable with all others remaining constant
L,ℓ	Moment coefficient reference length (ℓ = 0.75 in. for ogive-cylinder models, ℓ = 1.061 in. for elliptical models)
LP	Inlet plug position measured from the fully closed position, in.
MACH	Free-stream Mach number
PARENT CONFIG	Parent model configuration nomenclature
PB(1,2)/P8	Ratio of base pressure to free-stream static pressure
PO	Tunnel stilling chamber pressure, psia
PREF	Reference pressure for the base pressure transducer, psia
P8	Free-stream static pressure, psia
Q8	Free-stream dynamic pressure, psia
RE/FT*10**6	Free-stream Reynolds number $\times 10^{-6}$, ft^{-1}
ROLL	Store model roll angle, deg

S	Force and moment coefficient reference area, store cross-section area, in^2 (S = 0.4418 in^2 for ogive-cylinder models, S = 0.884 in^2 for elliptical models)
STORE CONFIG	Store model configuration nomenclature
TO	Tunnel stilling chamber temperature, ^oR
T8	Free-stream static temperature, ^oR
V8	Free-stream velocity, ft/sec
XT	Longitudinal tunnel station, positive is upstream, in. Zero is 7.0 in. upstream of Pin A
YAW,	Store model yaw angle, positive is nose right as seen by the pilot or when in the free-stream nose to the right, looking upstream, deg
YT	Lateral tunnel station, positive is right looking upstream, in. Zero when on tunnel longitudinal centerline
ZT	Vertical tunnel station, positive is down, in. Zero when on tunnel longitudinal centerline

8. TRAJECTORY TESTS

The trajectory phase of the test program consisted of obtaining simulated full-scale store separation trajectories using the CTS trajectory mode which is described in Section 2.2.2 of Reference 7. All trajectories were run assuming a scale factor of 20 between

the full scale aircraft and the wind-tunnel model, i.e., the full scale aircraft and store are twenty times larger than the wind-tunnel model.

All trajectories were run at a simulated altitude of 40,000 feet. This was accomplished by using a standard atmosphere table to determine the air density and speed of sound at 40,000 ft. This sound speed and the Mach number in the wind tunnel were used to determine the aircraft velocity at 40,000 ft. This calculated velocity plus appropriate components of the store velocity relative to the aircraft, the density at altitude, and the full scale reference area and length were used to dimensionalize the wind tunnel measured force and moment coefficients for use in the equations of motion. Twelve parent aircraft configurations in conjunction with the five store models were used in this phase of the testing. A few trajectories were run without a parent model being in the wind tunnel.

For all trajectories, the aerodynamic damping coefficients in the equations of motion were set to zero. Also, for all trajectories the plunge option was used. This option is discussed in Section 2.2.3 of Reference 7 and includes the store translational velocities in the CTS angle settings when measuring forces and moments.

Only trajectory data taken during the last two tunnel entries (T9A and V6A) are recorded on the data tape. Some trajectory data were taken during earlier entries but those data were used for validating the CTS trajectory mode in tunnel A. The quality of this earlier data cannot be assured. The stores used are the same as those used in the force and moment tests and are shown in Figures 22 and 23. The orientations of the finned stores on the balance in the carriage or initial position are the same as described in Section 7.

8.1 Summary of Tests

The trajectory tests are summarized in Table LXI. Column 1 lists the store tested and column 2 gives the table number where the parent aircraft configurations used with that store are listed as are the test conditions.

The trajectories obtained for the various stores are listed in Tables LXII through LXVI. The first item listed is the parent configuration (the model nomenclature was presented in Section 3.3). The next column gives the parent aircraft free-stream Mach number, M_∞. Column 5 lists the parent aircraft angle of attack, α_p. At the beginning of a trajectory the store is at the same angle of attack relative to the free stream and at 0° yaw and roll.

Column 6 lists the type of start, launch, L, or post-launch, PL. For launch trajectories the store is in the position listed in Table LXVII at zero velocity relative to the parent aircraft. For post-launch, PL, trajectories the store is located 0.24 feet full scale (0.144 inches model scale) below the initial position and has an initial downward velocity of 6.7053 feet per second. The trajectory starts at time, t, equal to 0.075 seconds.

Columns 7 and 8 are associated with the ejector force used for launch trajectories. The ejector has one foot which strikes the store at XL_1. This position is measured relative to the full scale store moment center (moment reference location) and is positive forward of this point. Two ejector forces were used and are designated "A" and "B". They are shown graphically in Figure 24 and specified by the following equations for the time interval from 0.0 to 0.075 seconds.

"A" $F = 1.41448 \times 10^5 t + 2.68614 \times 10^6 t^2$
$-2.2209 \times 10^8 t^3 + 3.52968 \times 10^9 t^4$
$-1.70086 \times 10^{10} t^5$, LBS

"B" $F = 1{,}200$ LBS

Column 9 indicates whether store rolling motion was included in the equations of motion. For all trajectories the balance was measuring the store rolling moment. A "No" in column 9 indicates it was set to zero in the equations of motion.

Column 10 lists the CTS zero point (reference point) from which the trajectory was started. The zero points are listed in Table LXVII. Column 1 lists the zero point number and column 2 defines the store location. The last column gives the coordinates, in model scale, of the store moment reference point (moment center) at the beginning of a launch trajectory in the X_P, Y_P, Z_P coordinate system shown in Figure 18. For post-launch trajectories, the values of Z_P should be increased by 0.144.

Column 11 in Tables LXII through LXVI specifies a trajectory code. The various codes are listed in Table LXVIII and specify the full-scale store mass and inertia characteristics used in the equations of motion. The last two columns of the trajectory data tables list the AEDC test number and the group number which contains the trajectory data. These columns provide the input data to the data retrieval computer program.

8.2 Data Uncertainties

Data uncertainties associated with the trajectory tests are of three types; test conditions, CTS attitude and position, and aerodynamic coefficients. These were discussed in Sections 4, 3.2, and 7.2, respectively. No attempts have been made to define an uncer-

tainty in store attitude and position at a specific point in a trajectory.

8.3 Trajectory Test Data Retrieval

All of the trajectory data obtained during tunnel entries T9A and V6A have been written on a magnetic tape. The data have been written in a standardized format so that one computer program could be written to retrieve the data.

8.3.1 Use of the computer program

A listing of the computer program used to retrieve the trajectory data is continued in Appendix F. The input to the program consists of two cards both read under 16I5 format. The first card requires two values to be entered in the first two fields of 5 characters. The first value is the number of groups of data to be retrieved. This value is limited to less than 17 solely because of dimensioning of the variable D in the retrieval program. The second value on the first card is an integer designating which entry the data to be retrieved is from (4 = T9A, 5 = V6A). The second card contains the group numbers of the data to be retrieved. This information is obtained from the tables described in Section 8.1.

The tape upon which the data is written is a multi-file tape. The first file has the data from T9A and the second file contains the data from V6A. In order to get the proper data the tape must be positioned at the beginning of the file that contains the data for the entry of interest.

8.3.2 Description of tabulated data

The number of pages of output for a trajectory varies depending on the length of the trajectory. Sample output is presented in

Appendix F following the program listing. The first line on each page of data identifies the type of data, the entry number, the time period of the entry, and the AEDC document that pertains to that entry. The second line gives the group number and page number. The page number is relative to the beginning of the particlar group of data, i.e., trajectory. The third line provides tunnel operating conditions and the simulated free-stream velocity and density. The fourth line provides the parent aircraft configuration and angle of attack in degrees. The fifth line tells the store configuration and the inlet plug position. These first five lines are repeated for each page of a given group of data. Following the five lines of heading information 16 trajectory variables are tabulated as a function of time.

The nomenclature used in the tabulated output is contained in the following table. The parent aircraft coordinate system is shown in Figure 18 and the store coordinate system is shown in Figure 21.

ALPHAK	Plunging pitch angle due to store vertical motion, positive is nose up as seen by the pilot, deg
ALPHAP	Current value in the integration loop of the angle of attack of the store body axes, positive is nose up as seen by the pilot, deg
ALPHA(PAR)	Parent model angle of attack, positive is nose up as seen by the pilot, deg
CAT, C_{A_t}	Total axial-force coefficient, total axial force/(Q8 · S)
CLL, C_{ℓ}	Rolling-moment coefficient, rolling moment/(Q8 · S · L)

CLM, C_m	Pitching-moment coefficient, pitching moment/ (Q8 · S · L)
CLN, C_n	Yawing-moment coefficient, yawing moment/ (Q8 · S · L)
CN, C_N	Normal-force coefficient, normal force/(Q8 · S)
CY, C_Y	Side-force coefficient, side force/(Q8 · S)
GROUP	Number associated with a trajectory
L, ℓ	Moment coefficient reference length, store diameter (in model scale, ℓ = 0.75 in. for ogive-cylinder models, ℓ = 1.061 in. for elliptical model)
LP	Inlet plug position measured from fully closed, in.
MACH	Free-stream Mach number
PARENT CONFIG	Parent model configuration nomenclature
PHI	Current value in the integration loop of the roll angle of the store body axes from the orientation at the carriage position, positive is clockwise (looking upstream), deg
PO	Tunnel stilling chamber pressure, psia
P8	Tunnel free-stream static pressure, psia
QS	Dynamic pressure that the store sees at the simulated altitude, psfa
Q8	Tunnel free-stream dynamic pressure, psia

RE/FT*10**6	Tunnel free-stream Reynolds number $\times 10^{-6}$, ft^{-1}
RHOS	Density at the altitude being simulated, $slugs/ft^3$
S	Force and moment coefficient reference area, store cross-section area (in model scale, S = 0.4418 $in.^2$ for ogive-cylinder models, S = 0.884 $in.^2$ for elliptical model
STORE CONFIG	Store model configuration nomenclature
TIME	Trajectory integration time, sec
TO	Tunnel stilling chamber temperature, ^oR
TRAJECTORY CODE	Number associated with Table LXVIII
T8	Tunnel free-stream static temperature, ^oR
VA	Velocity of parent aircraft at the altitude being simulated, ft/sec
VS	Velocity of the store at the altitude being simulated, ft/sec
V8	Tunnel free-stream velocity, ft/sec
X	Current value in the integration loop of the full scale X_p displacement of the full scale store moment center from the carriage position in the parent axes, positive is upstream, ft

Y Current value in the integration loop of the full scale Y_p displacement of the full scale store moment center from the carriage position in the parent axes, positive is to the right as seen by the pilot, ft

YAWK Plunging yaw angle due to store lateral motion, positive is nose right as seen by the pilot, deg

YAW2P Current value in the integration loop of the yaw angle of the store body axes from the orientation at the carriage position, positive is nose right as seen by the pilot, deg

Z Current value in the integration loop of the full scale Z_p displacement of the full scale store moment center from the carriage position in the parent axes, positive is down as seen by the pilot, ft

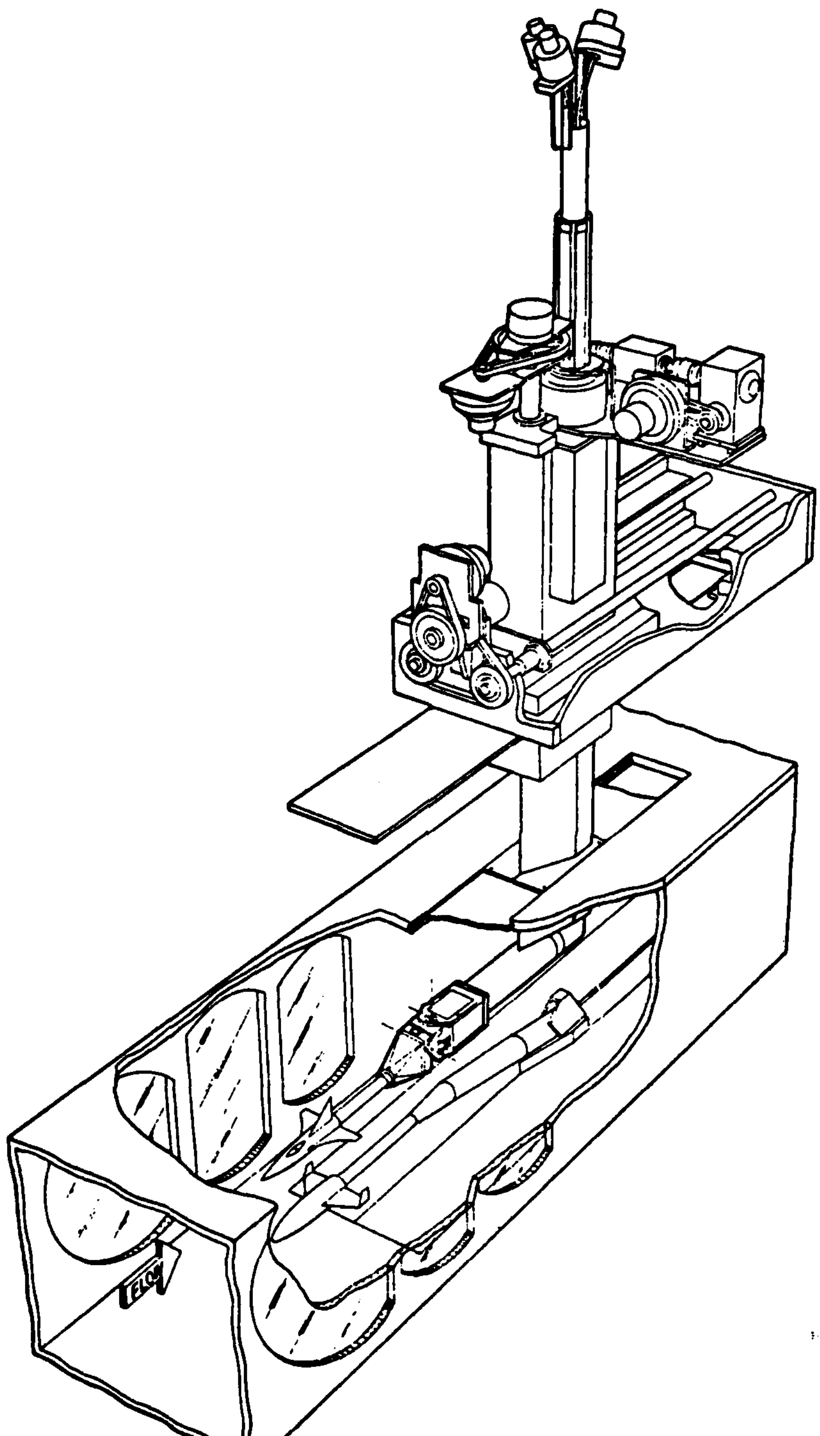
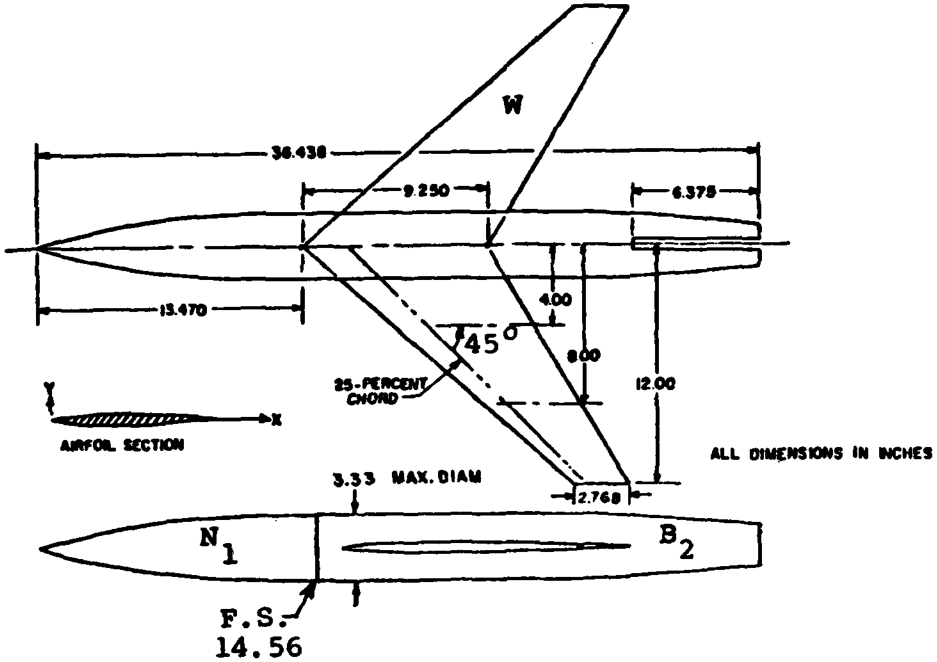


Figure 1.- Artist's conception of the VKF/CTS installed in Tunnel A.



BODY COORDINATES

STATION PERCENT LENGTH	RADIUS PERCENT LENGTH
0.00	0.00
3.28	0.91
6.57	1.71
9.86	2.41
13.15	3.00
16.43	3.50
19.72	3.90
23.01	4.21
26.29	4.43
29.58	4.53
32.00	4.57
75.34	4.57
76.69	4.54
79.98	4.36
83.26	4.18
86.55	3.95
89.84	3.72
93.13	3.49
96.41	3.26
100.00	3.02

NACA 65A006

AIRFOIL COORDINATES

X, % CHORD SEE SEC.	Y, % CHORD SEE SEC.
0.00	0.000
0.50	0.464
0.75	0.563
1.25	0.718
2.50	0.981
5.00	1.313
7.50	1.591
10.00	1.824
15.00	2.194
20.00	2.474
25.00	2.687
30.00	2.842
35.00	2.945
40.00	2.996
45.00	2.992
50.00	2.925
55.00	2.793
60.00	2.602
65.00	2.364
70.00	2.087
75.00	1.775
80.00	1.437
85.00	1.083
90.00	0.727
95.00	0.370
100.00	0.013
L.E. RADIUS 0.229% CHD.	
T.E. RADIUS 0.014% CHD.	

Figure 2.- Configuration N_1B_2W.

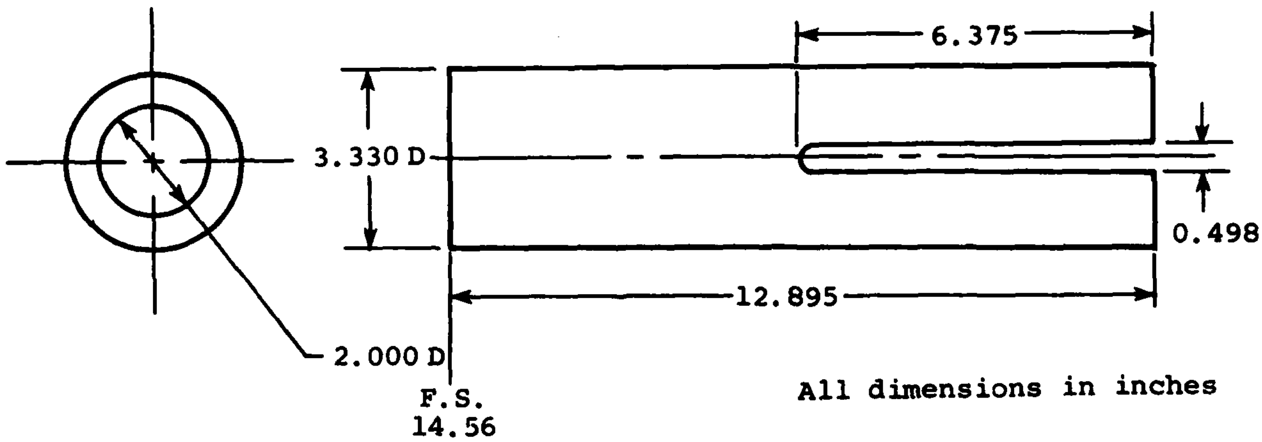
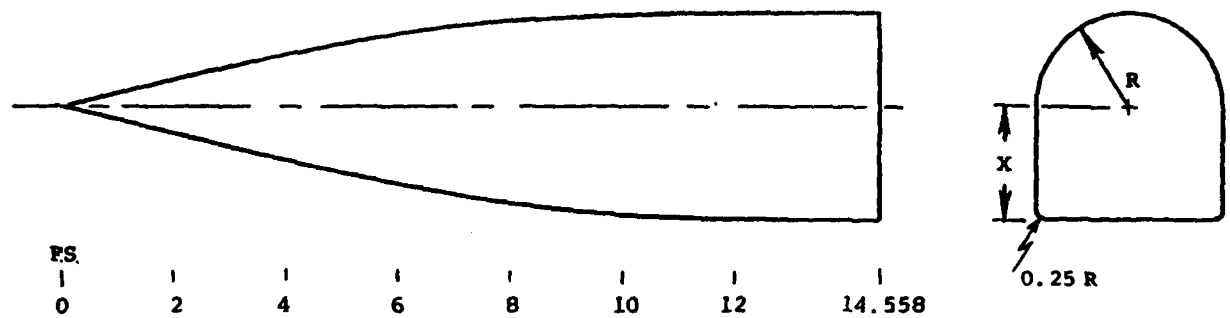


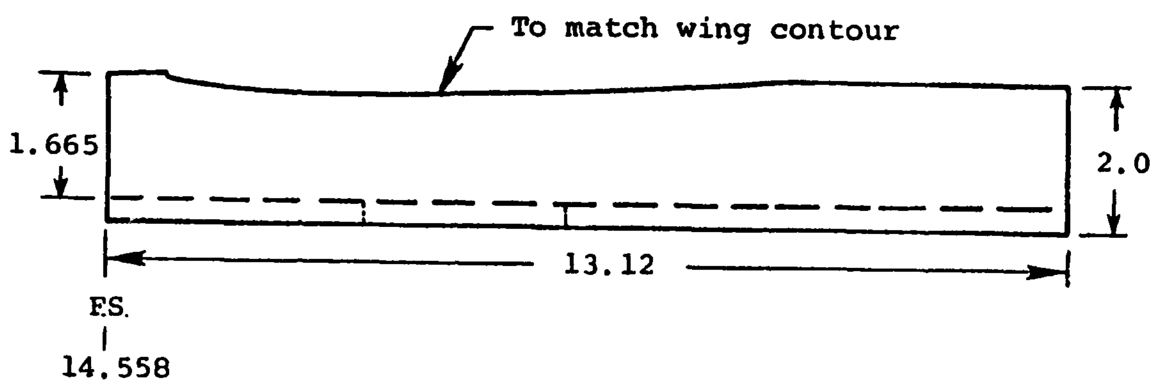
Figure 3.- Short fuselage, B_1.



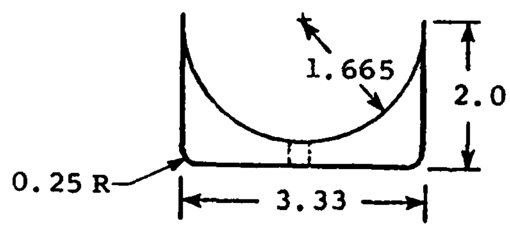
F.S.	R	X
0	0	0
1.0	0.25	0.25
2.4	0.623	0.639
3.0	0.75	0.778
3.6	0.878	0.921
4.0	0.955	1.009
4.5	1.045	1.114
5.0	1.129	1.214
6.0	1.275	1.395
6.5	1.348	1.488
7.0	1.404	1.581
8.0	1.504	1.702
8.4	1.534	1.747
9.0	1.580	1.817
9.6	1.614	1.874
10.0	1.632	1.908
10.8	1.651	1.955
11.66	1.665	2.000

All dimensions in inches

Figure 4.- Noncircular nose, N_3.



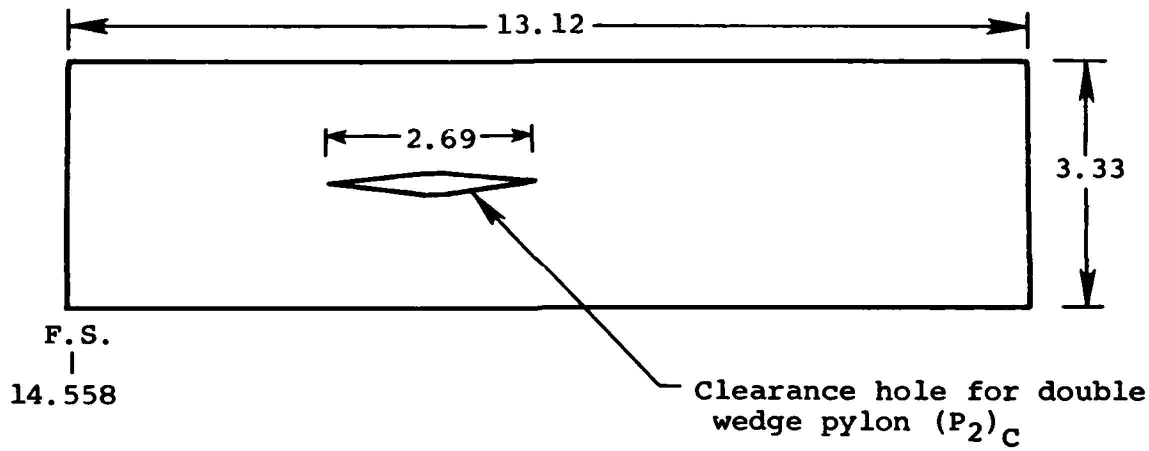
(a) Side view.



All dimensions in inches

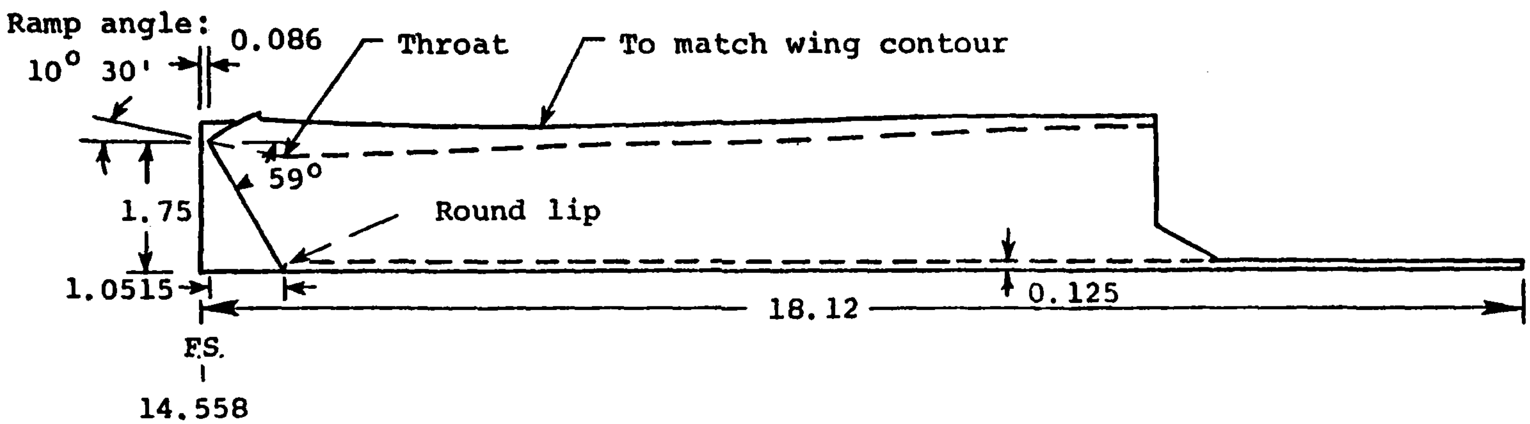
(b) Front view.

Figure 5.- Noncircular fuselage adapter, A_3.

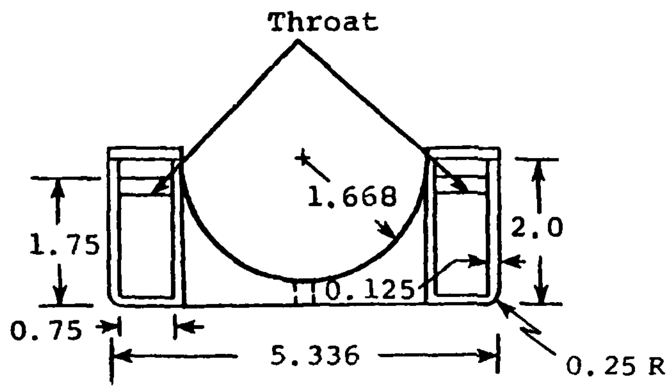


(c) Top view.

Figure 5.- Concluded.



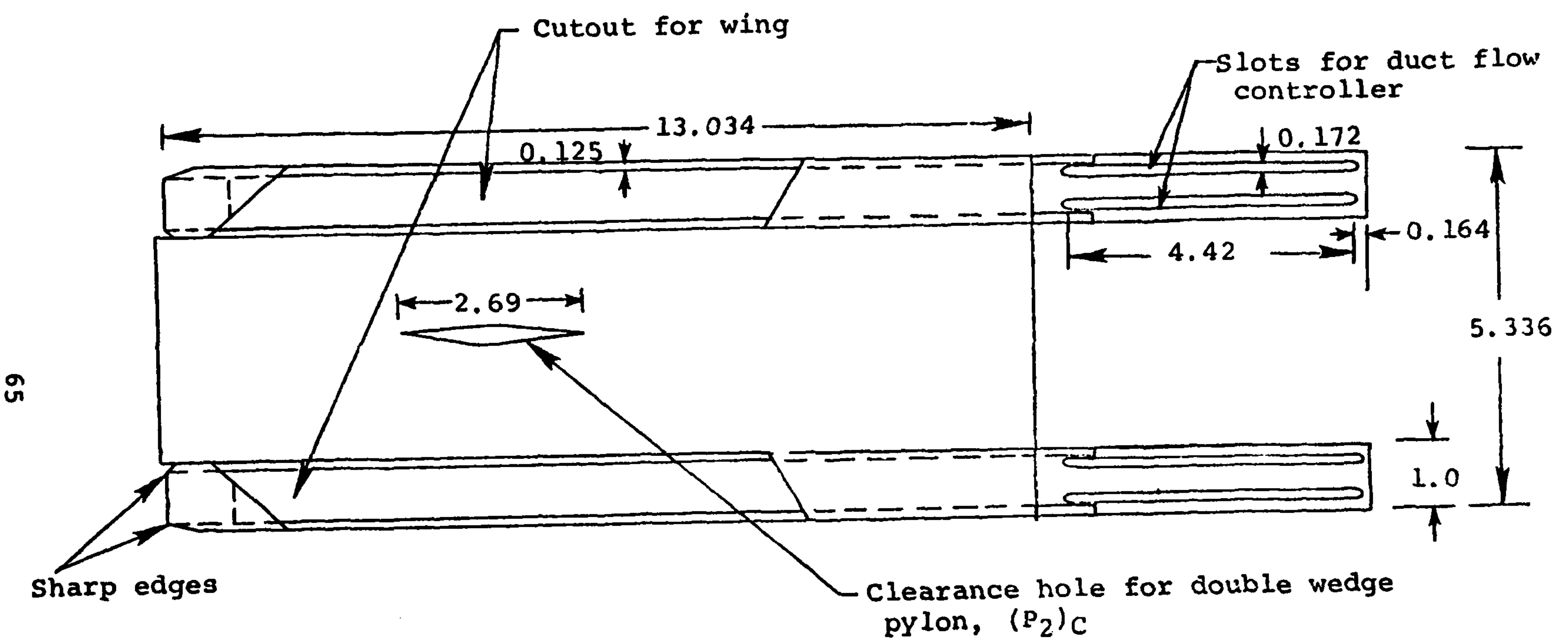
(a) Side view.



(b) Front view.

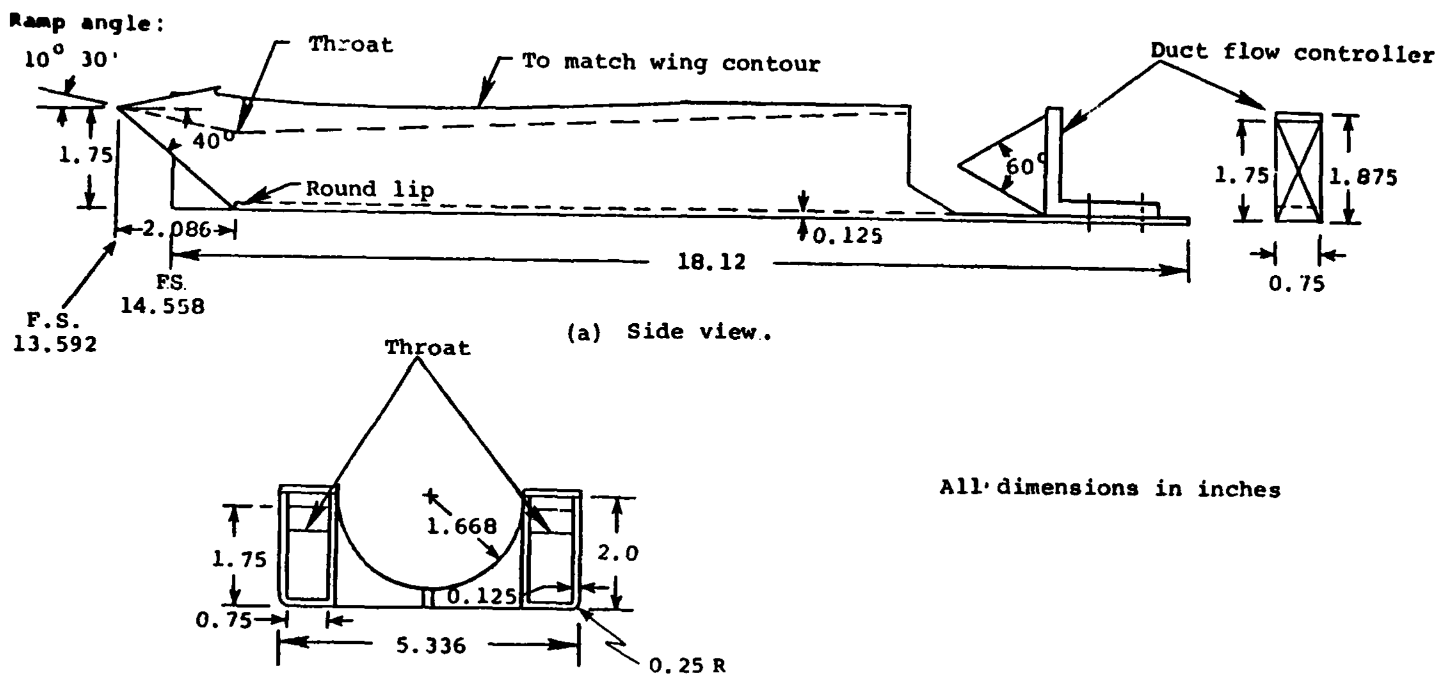
All dimensions in inches

Figure 6.- Duct assembly for $M_\infty = 1.5$, A_4.



(c) Top view.

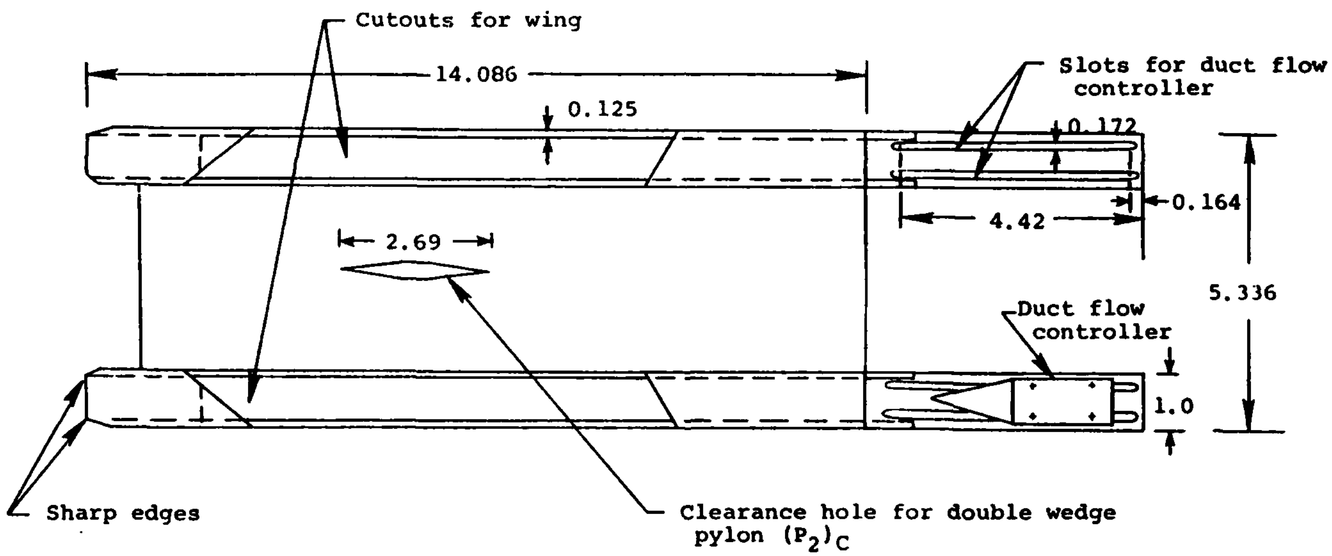
Figure 6.- Concluded.



(a) Side view.

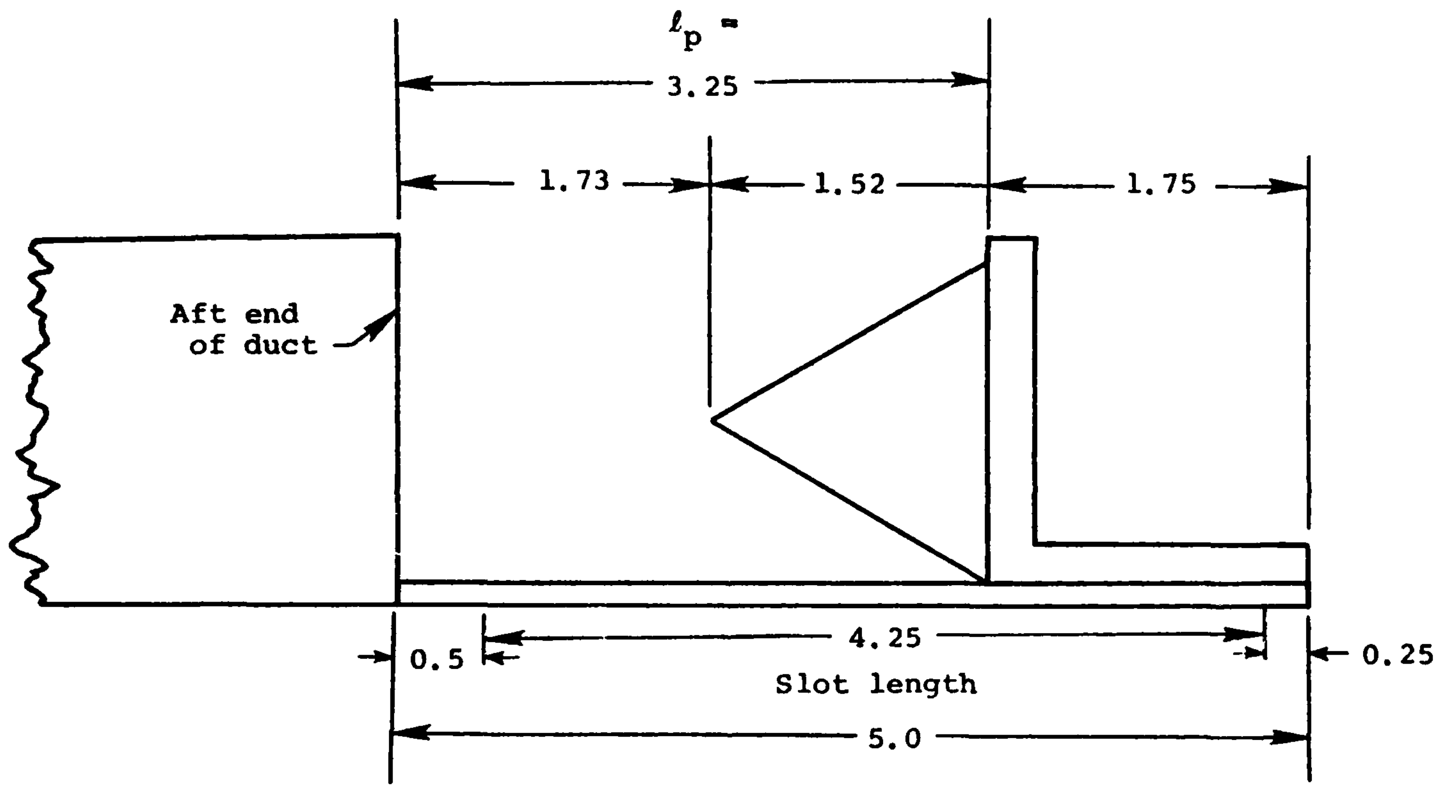
(b) Front View.

Figure 7.- Duct assembly for $M_\infty = 2.0$, A_5.



(c) Top view.

Figure 7.- Concluded.



Full Aft Plug Position

Figure 8.- Location of duct plugs.

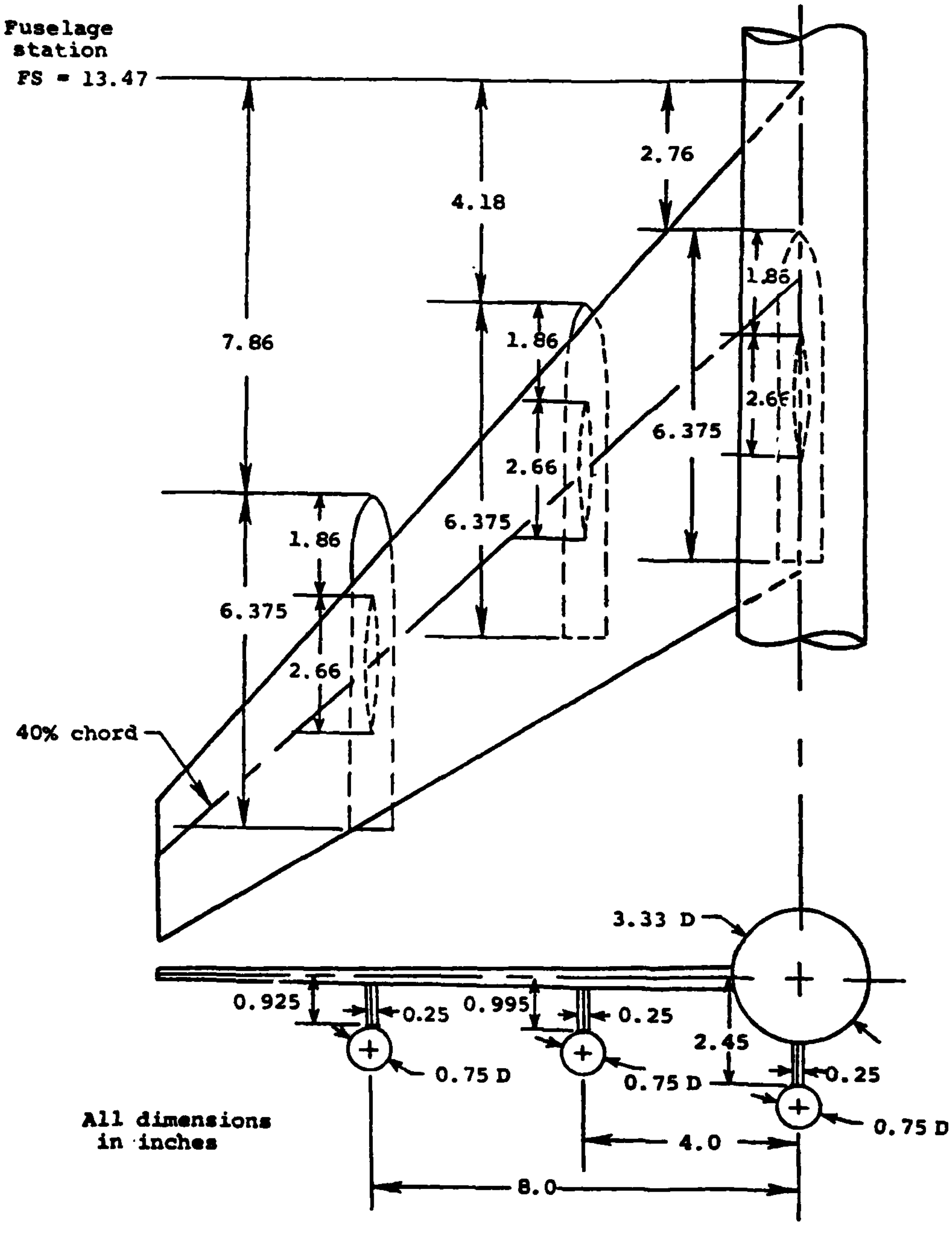


Figure 9.- Ogive-cylinder force and moment store in the carriage position at the fuselage centerline, 1/3 semispan, and 2/3 semispan pylon stations.

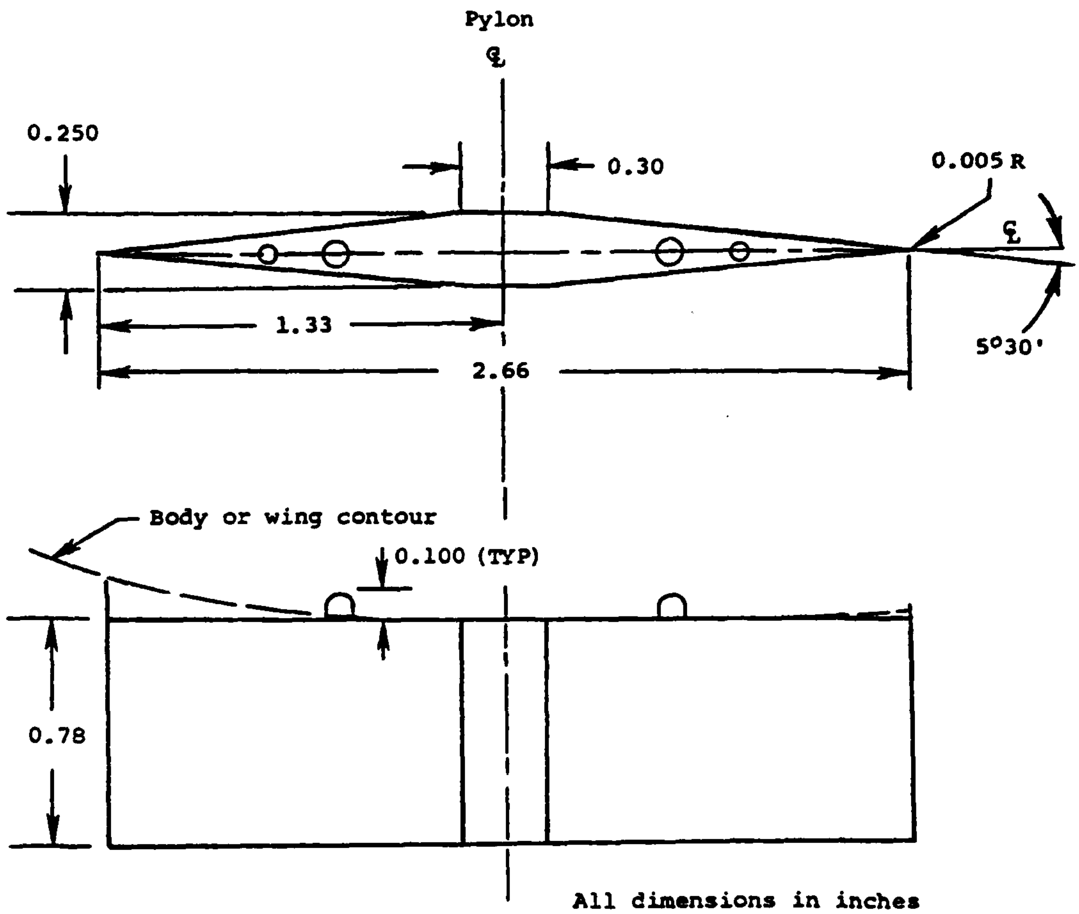


Figure 10.- Double-wedge pylon, P_2.

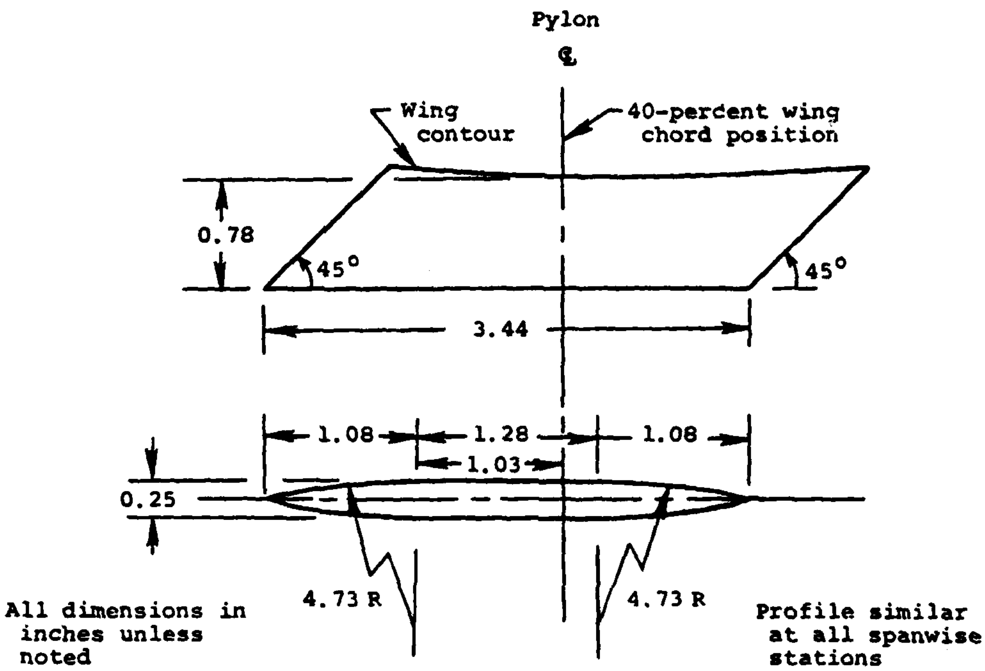


Figure 11.- Swept pylon, P_3.

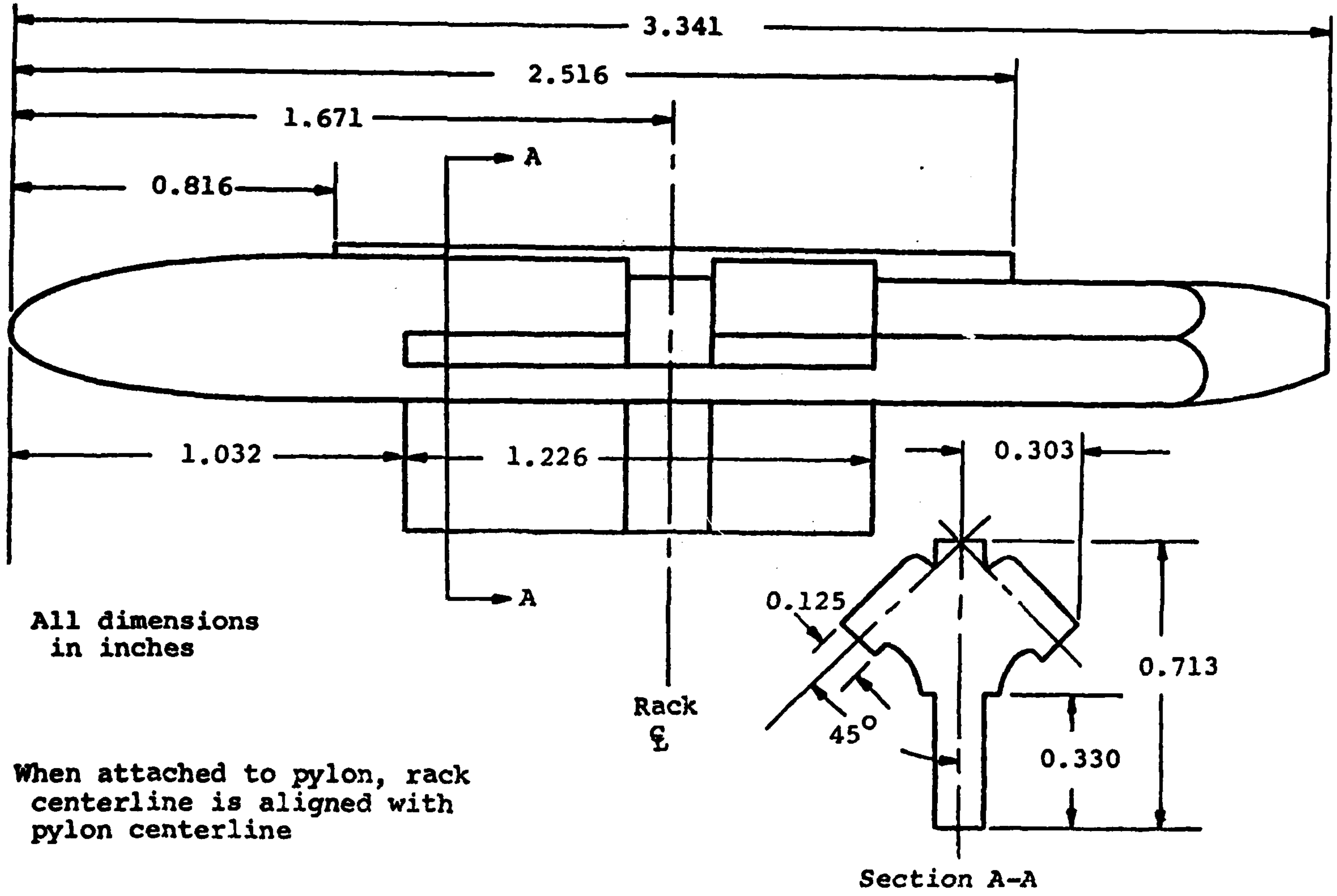
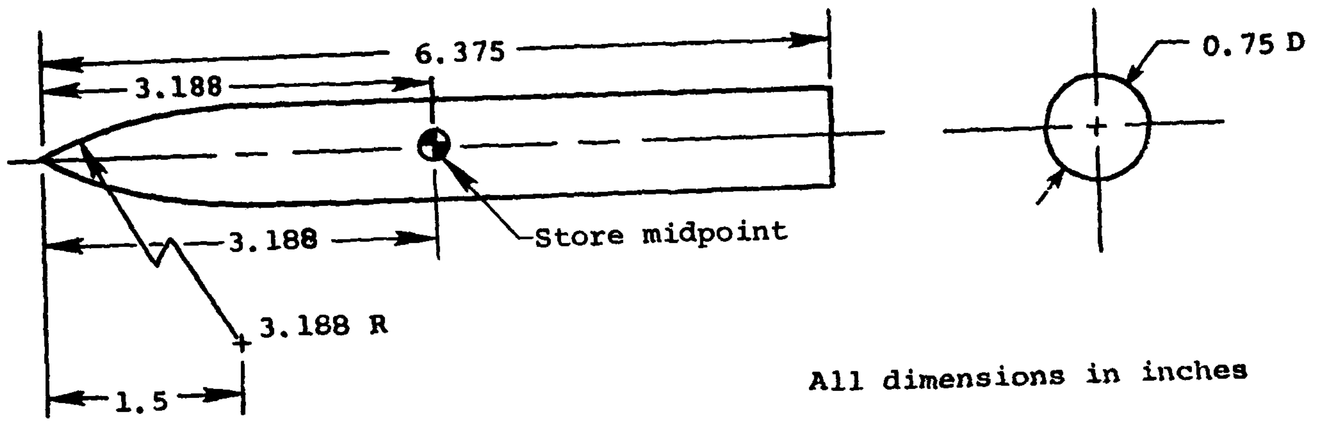


Figure 12.- Triple ejection rack, T.



All dimensions in inches

Figure 13.- Dummy ogive-cylinder store, S_{DOC}, S_{DOC2}, or S_{DOC3}.

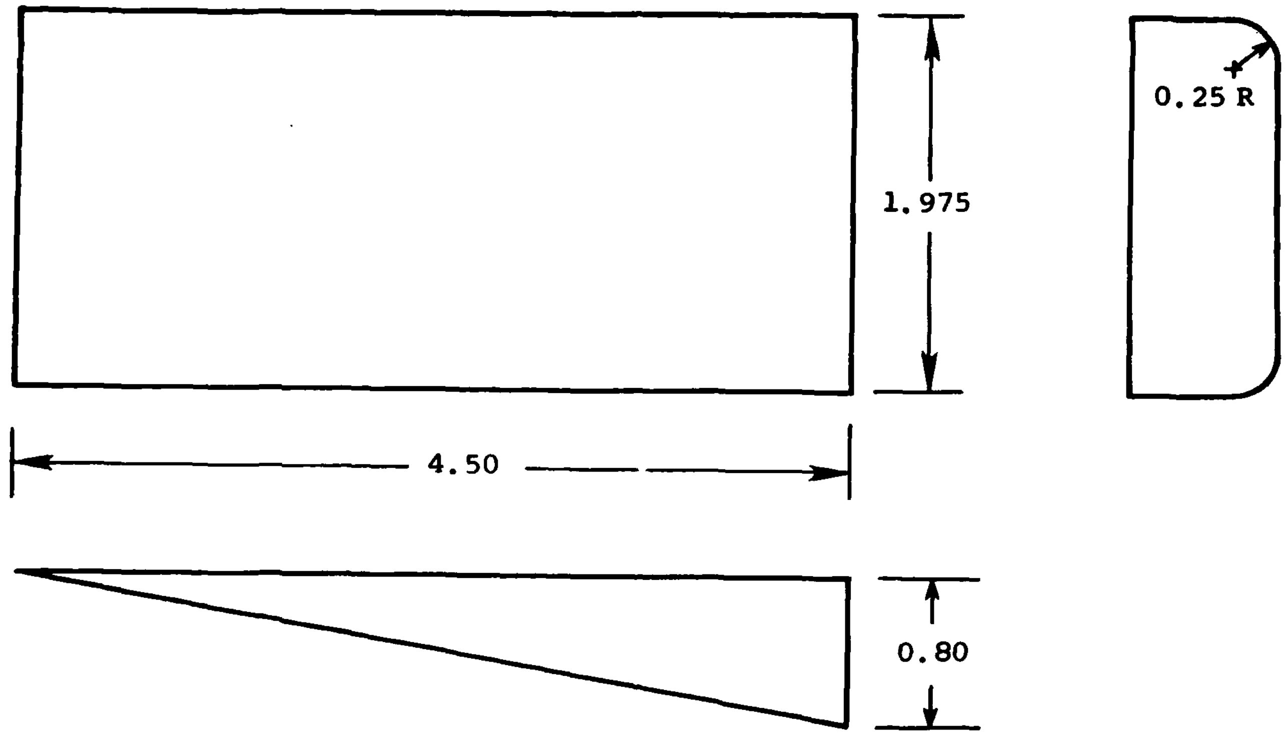


Figure 14.- Details and dimensions of fairing, F.

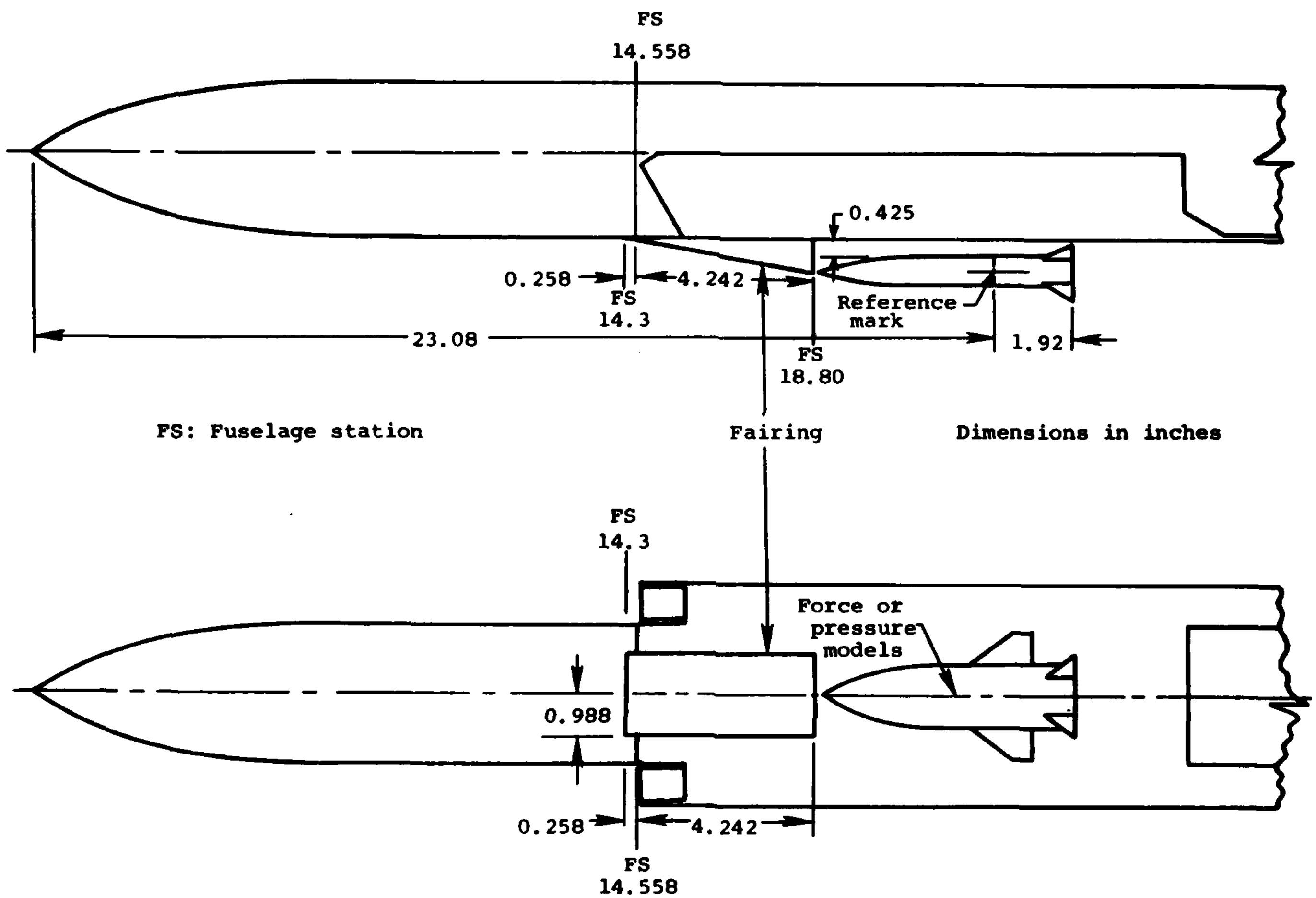
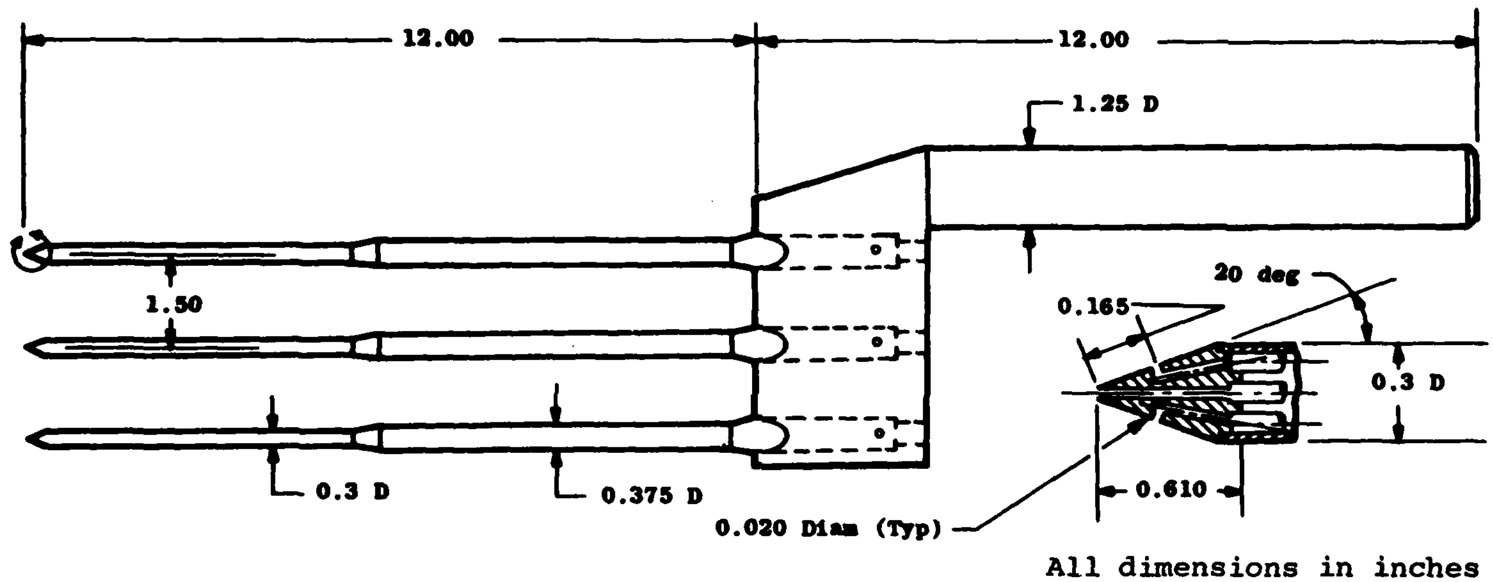


Figure 15.- Fairing location on parent aircraft



Note: Probe dimensions are typical for each probe.

Figure 16.- Flow field rake.

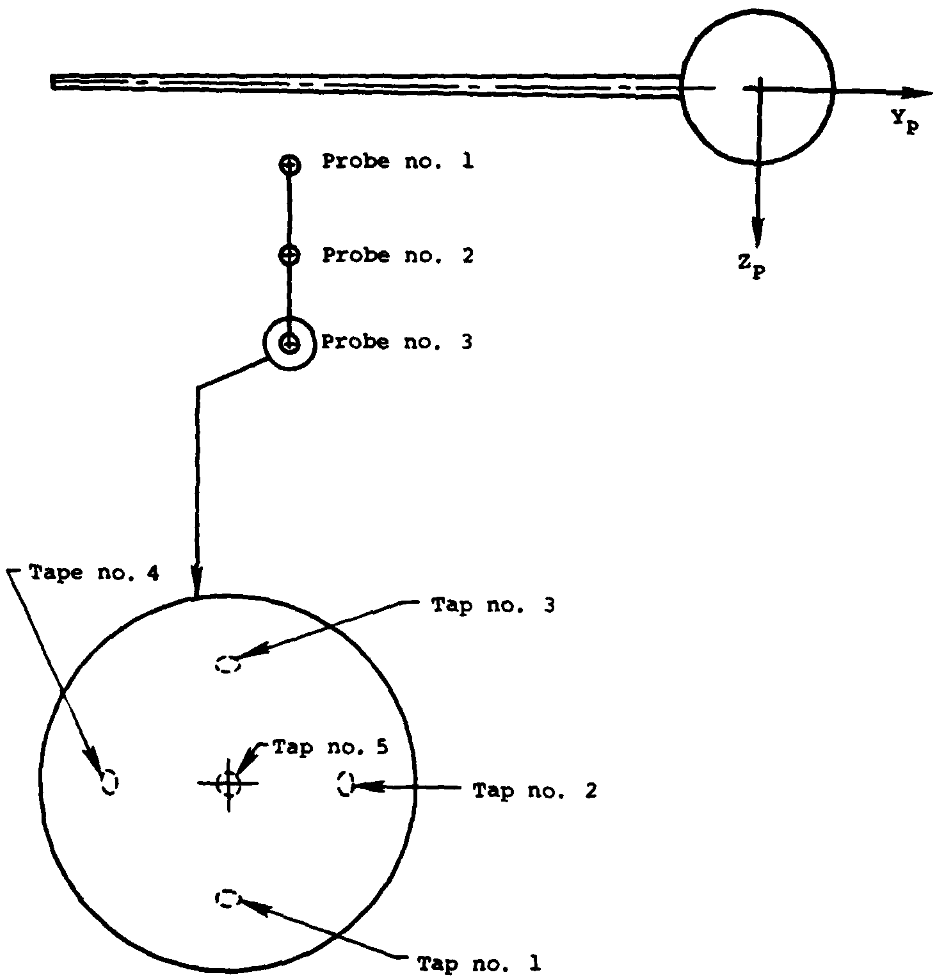


Figure 17.- Orientation of rake and location of pressure taps on the 40° total angle conical probe as seen from the aft end of the parent configuration.

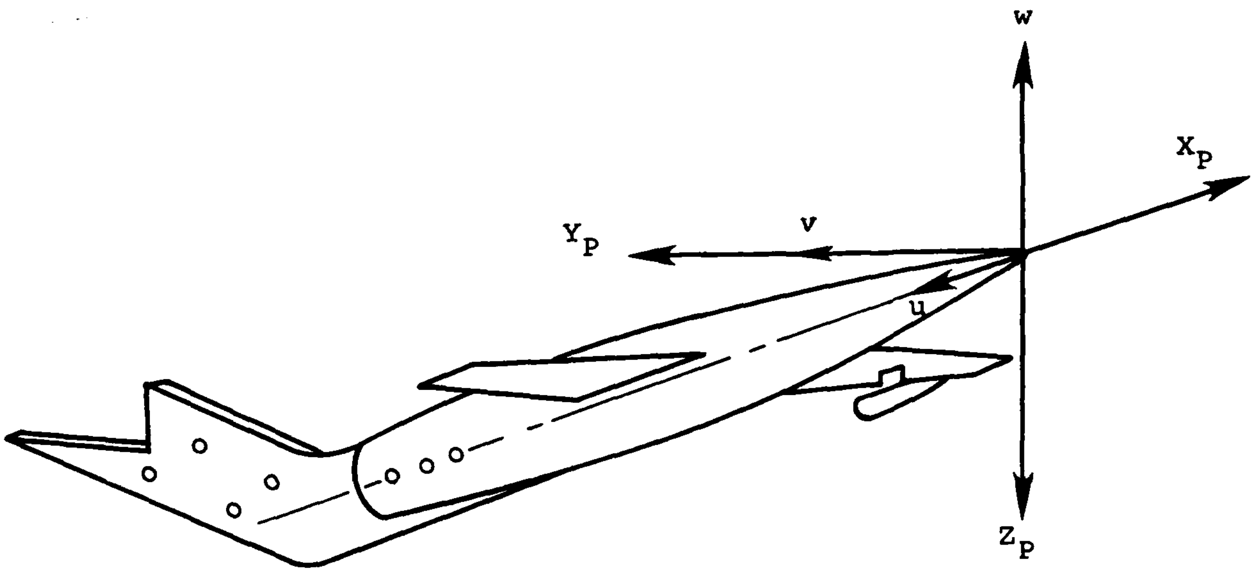


Figure 18.- Wing-body (parent aircraft) axis system showing positive directions of axes and velocities.

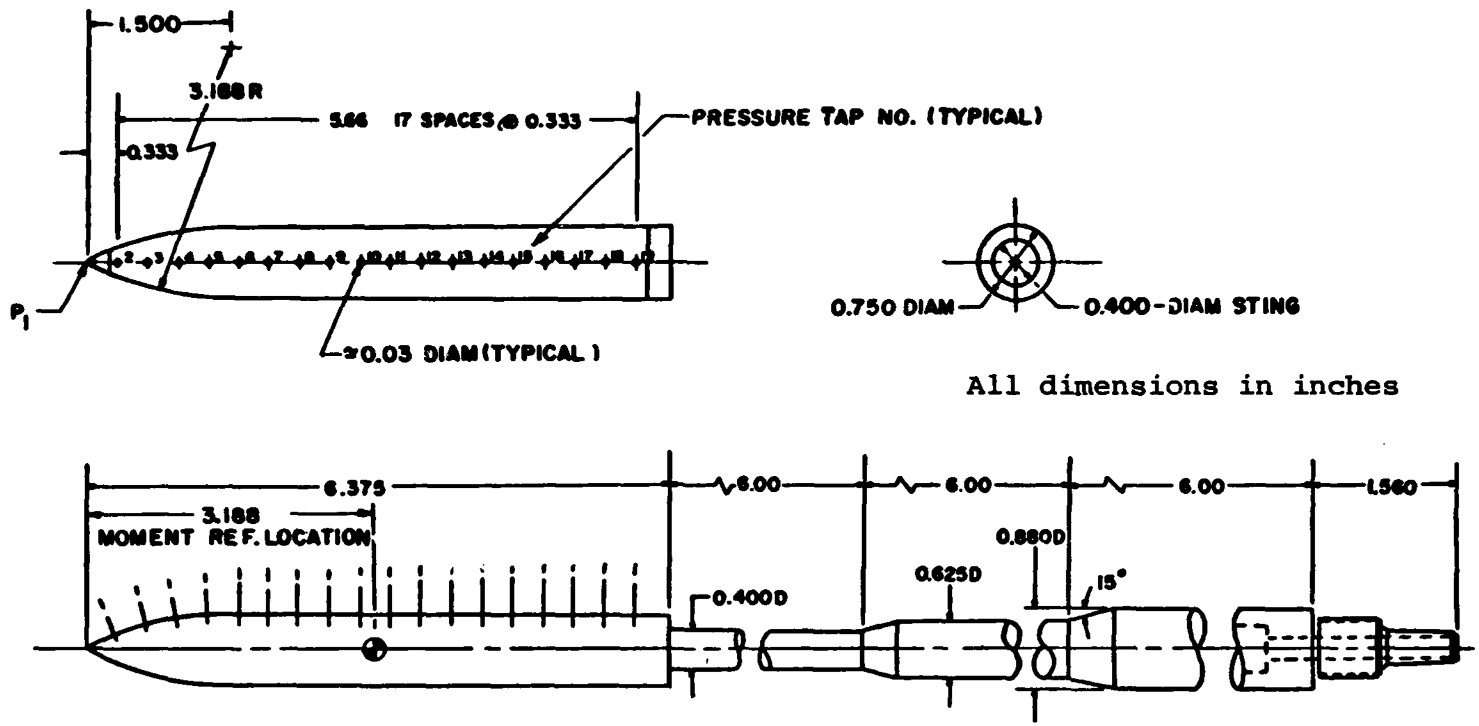
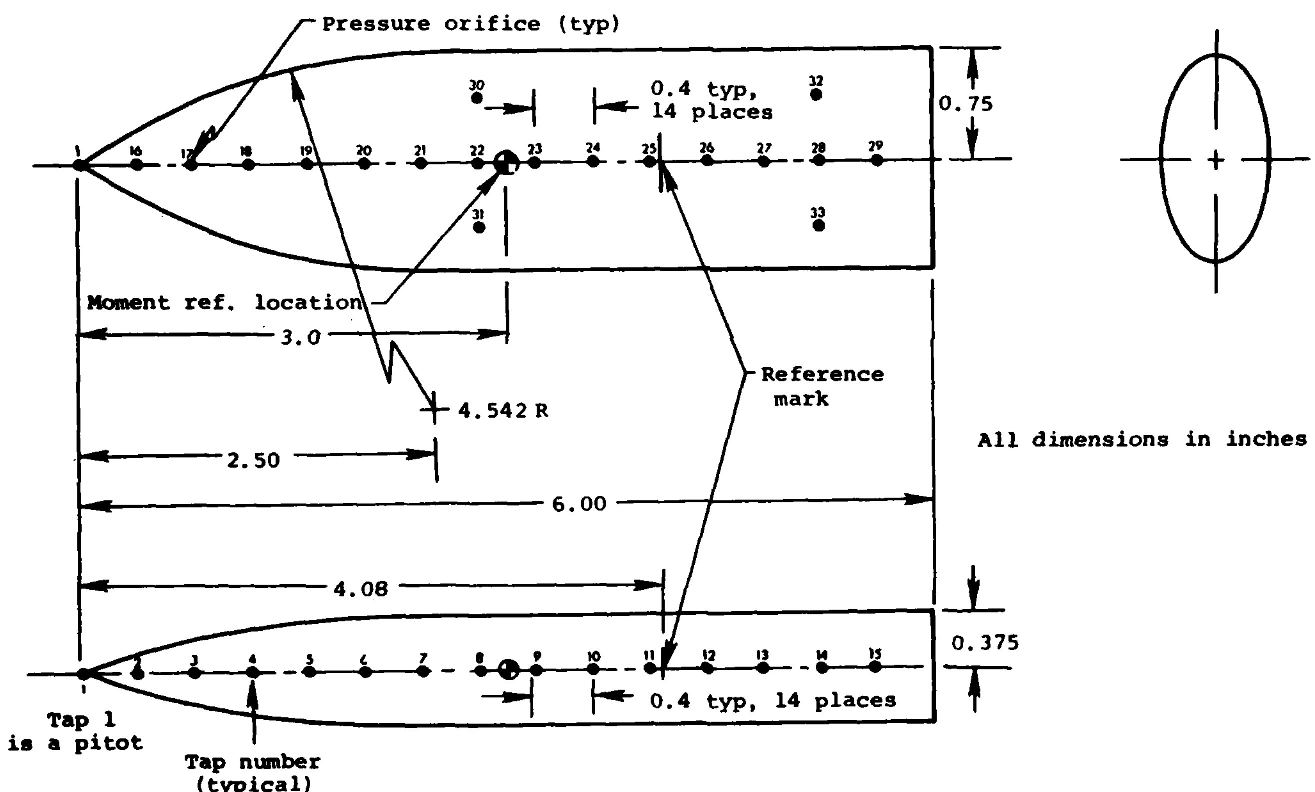


Figure 19.- Ogive-cylinder pressure distribution model, S_p.

AD-A083 848 NIELSEN ENGINEERING AND RESEARCH INC MOUNTAIN VIEW CALIF F/G 20/4
DATA REPORT FOR AN EXTENSIVE STORE SEPARATION TEST PROGRAM COND--ETC(U)
DEC 79 F K GOODWIN, C L DYER F33615-76-C-3077

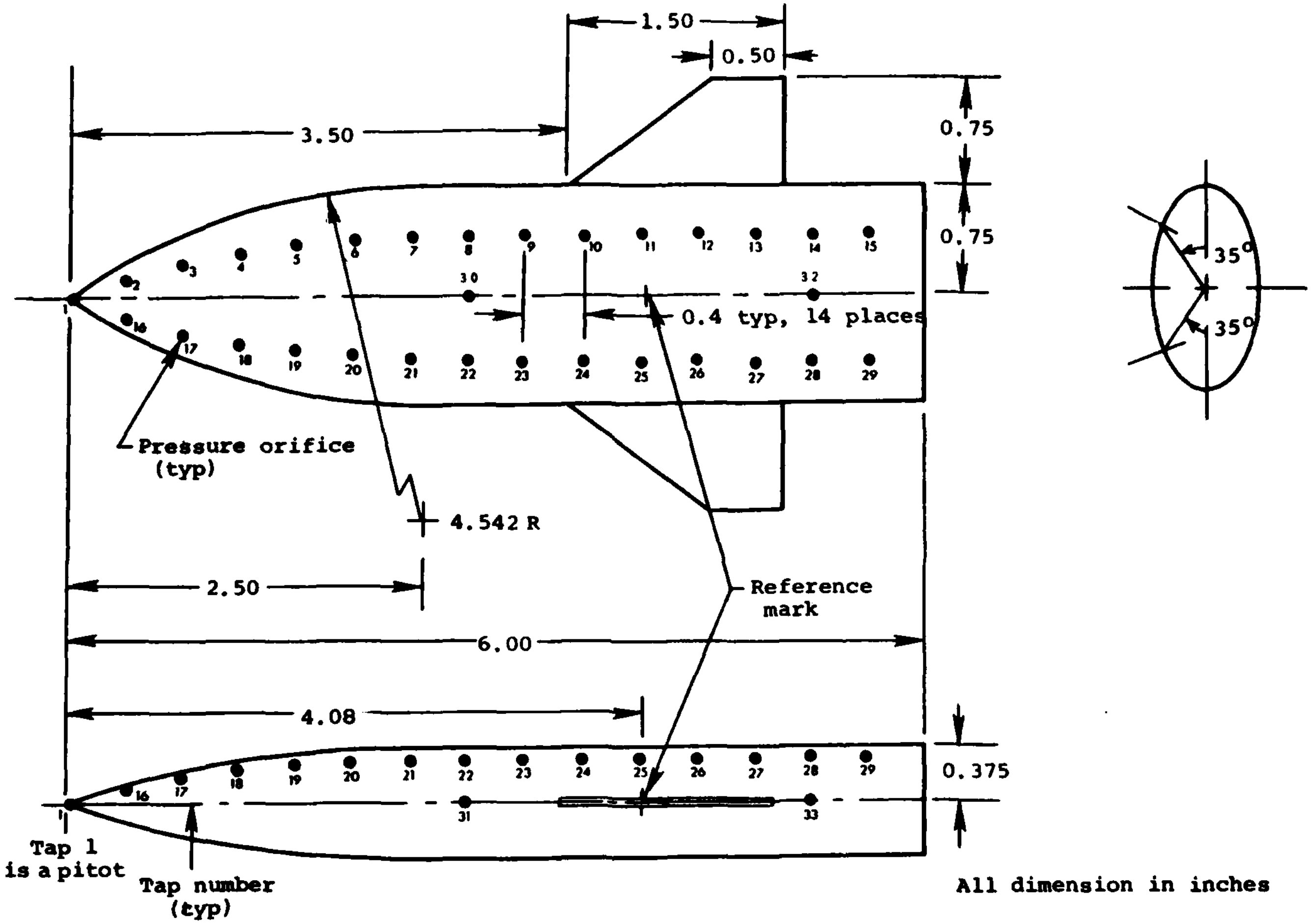
UNCLASSIFIED NEAR-TR-205 AFFDL-TR-79-3130 NL

AD A
083848



(a) S_{EP1}.

Figure 20.- Elliptic pressure distribution models.



(b) S_{EP2W} with wing, S_{EP2} without wings.

Figure 20.- Concluded.

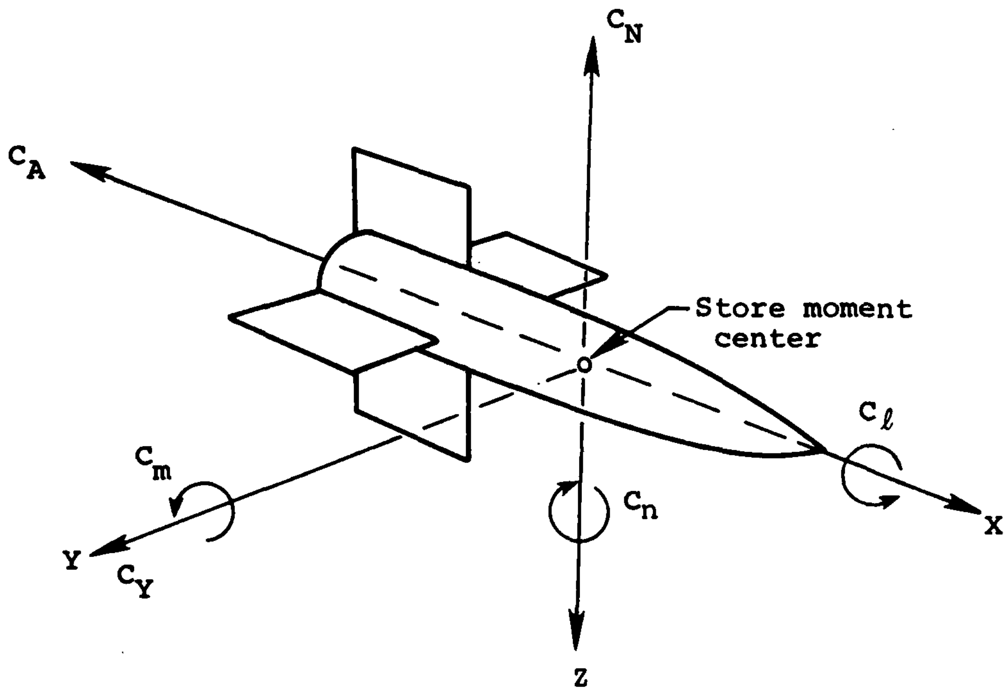
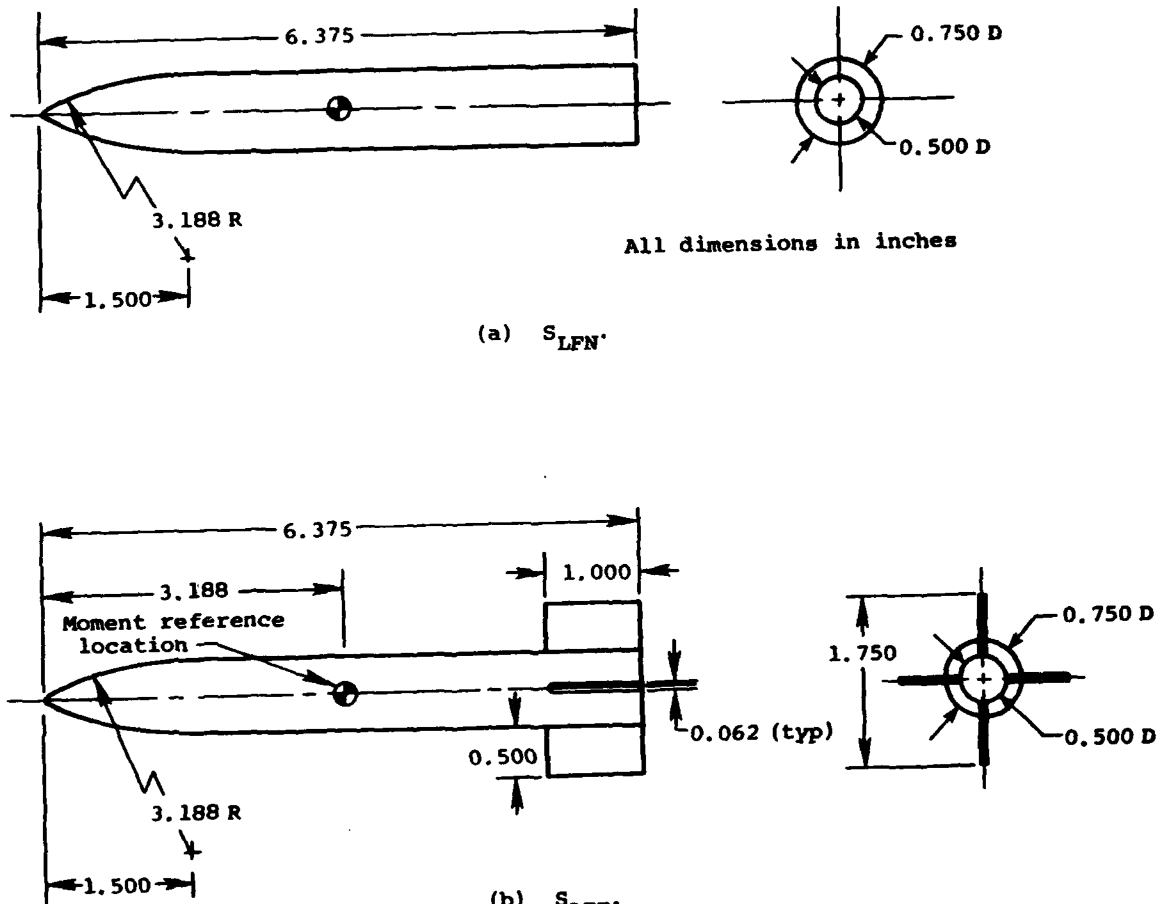


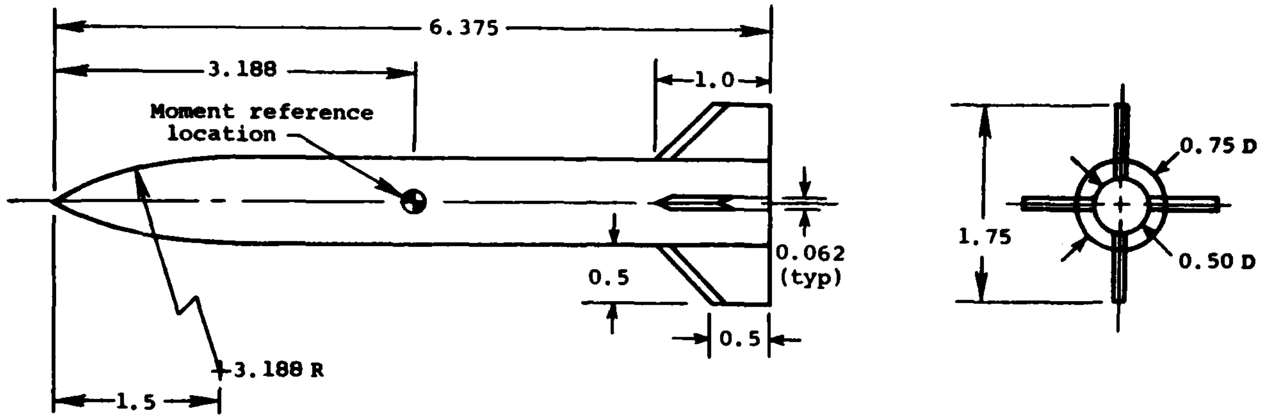
Figure 21.- Axis system for store showing positive sense of axes, forces and moments.



(a) S_{LFN}.

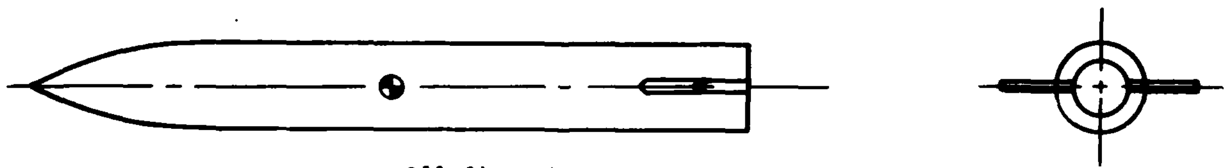
(b) S_{LFF}.

Figure 22.- Ogive-cylinder force and moment stores.



All dimensions in inches

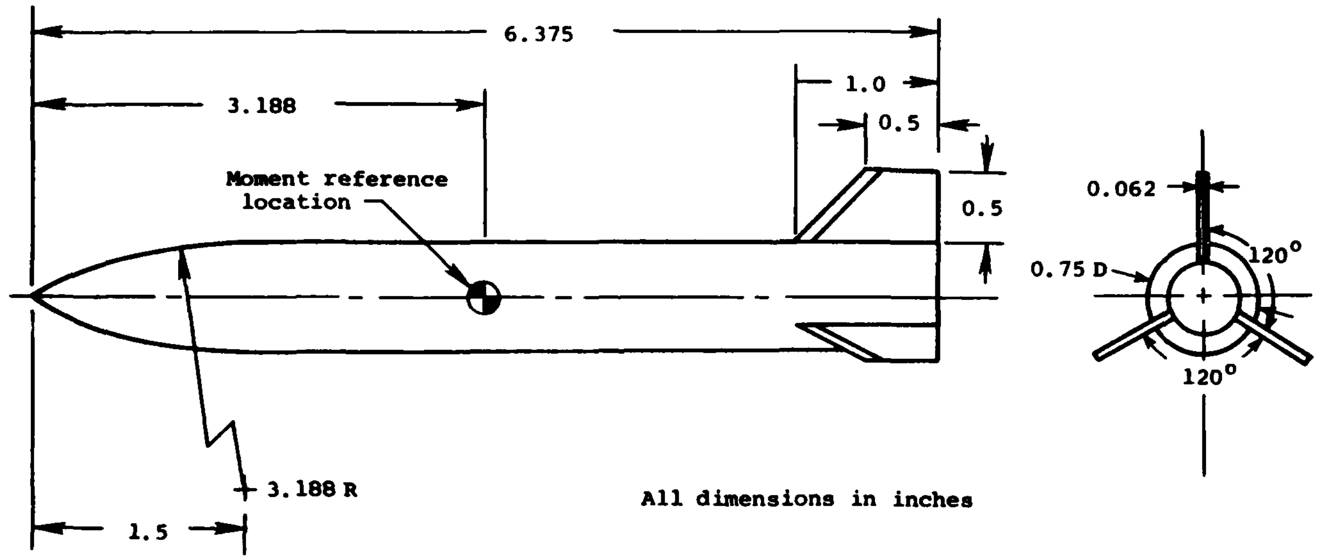
(c) Cruciform ogive-cylinder store, S_{COC}.



All dimensions same as above

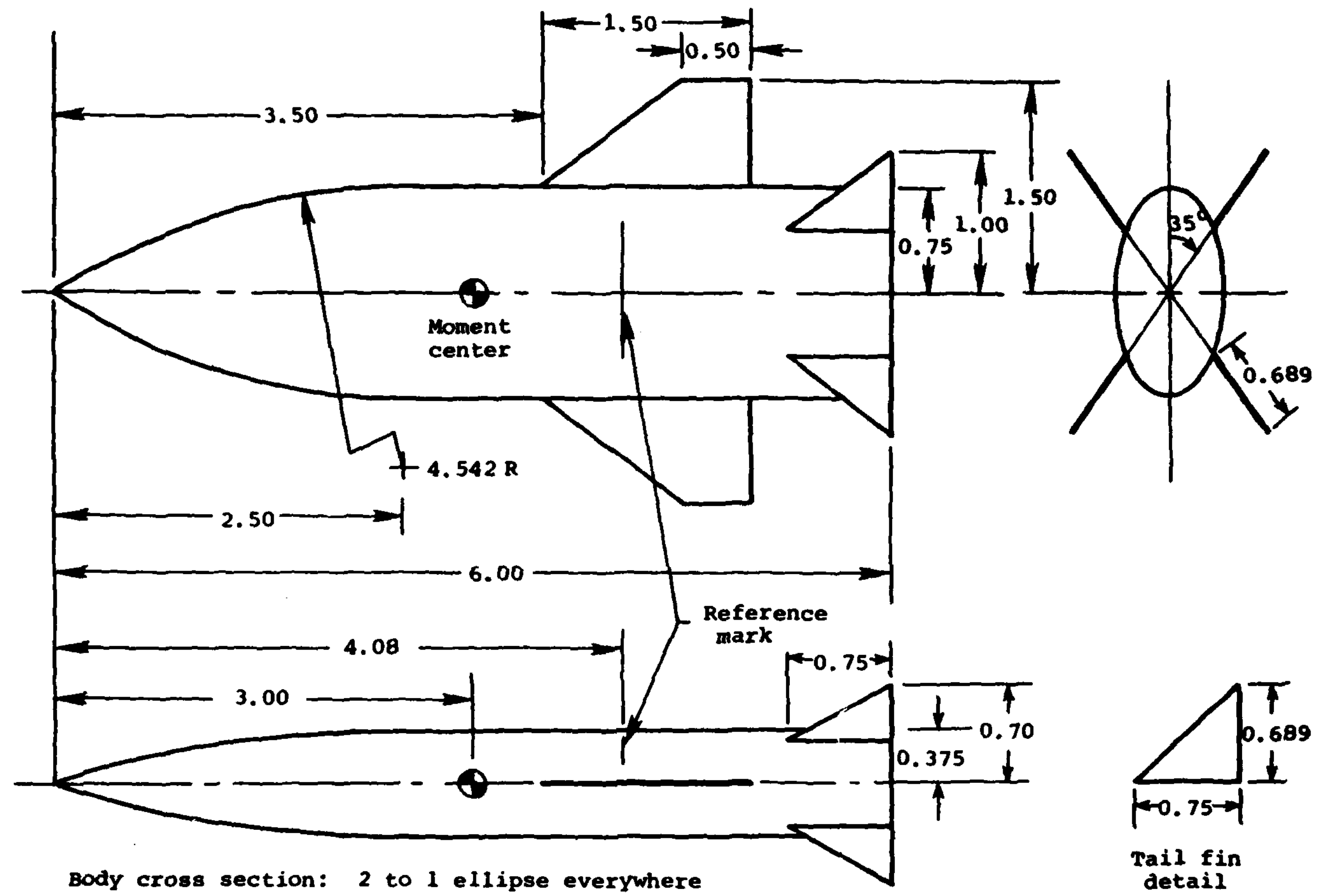
(d) Planar ogive-cylinder store, S_{POC}.

Figure 22.- Continued.



(e) Triform ogive-cylinder store, S_{TOC}.

Figure 22.- Concluded.



Body cross section: 2 to 1 ellipse everywhere
Wing leading and tailing edges: Double wedge
Tail fin leading edge: Double wedge

Figure 23.- Elliptic force and moment model, S_E.

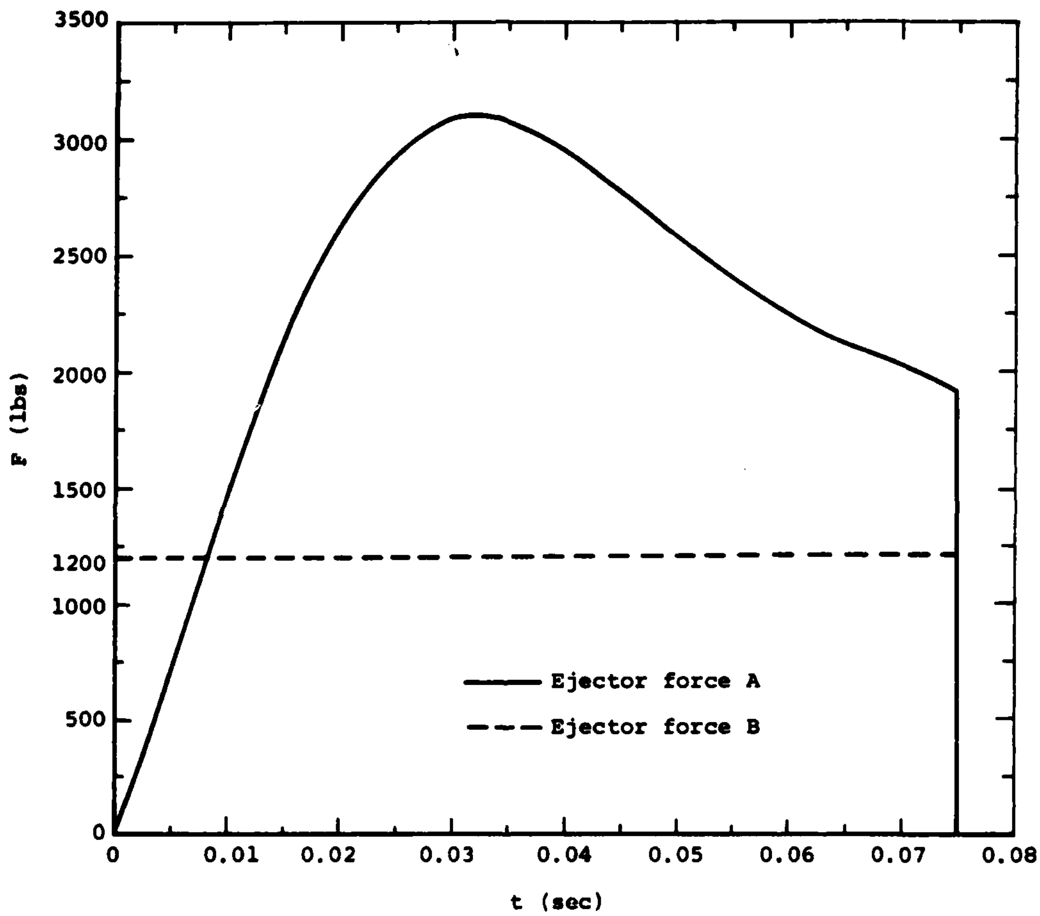


Figure 24.- Simulated ejector force curves.

TABLE I

SUMMARY OF FLOW FIELD
SURVEY DATA

Parent Aircraft Configuration	Test Conditions Table Number
N_1B_1	II
N_1B_2W	III
$N_1B_2W(P_2)_c$	IV
$N_1B_2W(P_2)_{1/3}$	V
$N_1B_2W(P_3)_{1/3}$	VI
$N_1B_2W(P_2)_{2/3}$	VII
$N_1B_2W(P_2)_{1/3}S_{DOC}$	VIII
$N_1B_2W(P_2)_{1/3}T$	IX
$N_1B_2W(P_2)_{1/3}T\ S_{DOC2}S_{DOC3}$	X
$N_3B_1A_3$	XI
$N_3B_2WA_3$	XII
$N_3B_2WA_3(P_2)_c$	XIII
$N_3B_2WA_3(P_3)_{1/3}$	XIV
$N_3B_2WA_3F$	XV
$N_3B_2WA_4$	XVI
$N_3B_2WA_4(P_2)_c$	XVII
$N_3B_2WA_4(P_3)_{1/3}$	XVIII
$N_3B_2WA_4F$	XIX
$N_3B_2WA_5$	XX
$N_3B_2WA_5(P_2)_c$	XXI
$N_3B_2WA_5(P_3)_{1/3}$	XXII
$N_3B_2WA_5F$	XXIII

TABLE II

FLOW FIELD SURVEY DATA - N_1B_1

1	2	3	4	5	6	7	8
M_∞	α	X_p RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-1,-22	0.0	2.87	-	M9A	299&300
			0.0	3.62			301&302
			-2.5	0.62			303
			-2.5	1.37			304
	5.0		0.0	2.87			329
			0.0	3.62			330
			-1.0	2.87			331
			-1.0	3.62			332
			-1.75	2.87			333
			-1.75	3.62			334
			-2.5	0.62			335
			-2.5	1.37			336
			-3.5	0.62			337
			-3.5	1.37			338
			-4.0	0.62			339
			-4.0	1.37			340
2.0			0.0	2.87			342
			0.0	3.62			343
			-1.0	2.87			344
			-1.0	3.62			345
			-1.75	2.87			346
			-1.75	3.62			347
			-2.5	0.62			348
			-2.5	1.37			349
			-3.5	0.62			350
			-3.5	1.37			351
			-4.0	0.62			352
			-4.0	1.37			353

TABLE III
FLOW FIELD SURVEY DATA - N_1B_2W

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-13,-26	0.0	2.83	-	B4A	136
		-15,-28		2.87		M9A	69
		-13,-26		3.58		B4A	137
		-15,-28	-1.0	2.87		M9A	70
			-1.0	3.62			71
			-1.75	2.87			72
			-1.75	3.62			73
		-15,-30	-2.5	1.37			74
			-2.5	2.12			75
			-3.5	1.37			76
			-3.5	2.12			77
		-16,-28	-4.0	1.37		B4A	142
		-16,-32				L5A	8&9
		-16,-32				M9A	78
		-16,-28		2.12		B4A	143
			-4.5	1.37			145
			-4.5	2.12			144
		-20,-31	-8.0	1.37			153
		-20,-34		1.37		M9A	79
		-20,-31		2.12		B4A	154
	5.0	-13,-26	0.0	2.83		B4A	204
		-15,-28		2.87		M9A	213
		-13,-26		3.58		B4A	205
		-15,-28	-1.0	2.87		M9A	214
			-1.0	3.62			215
			-1.75	2.87			216
			-1.75	3.62			217
		-15,-30	-2.5	1.37			218
			-2.5	2.12			219
			-3.5	1.37			220
			-3.5	2.12			221
		-16,-28	-4.0	1.37		B4A	212
		-16,-32				L5A	29&30
		-16,-32				M9A	222
		-16,-28		2.12		B4A	213
			-4.5	1.37			215
			-4.5	2.12			214

TABLE III (Continued)

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	5.0	-20,-31	-8.0	1.37	-	B4A	223
		-20,-34		1.37		M9A	223
		-20,-31		2.12		B4A	224
2.0	0.0	-13,-26	0.0	2.83			174
		-13,-26	0.0	3.58			175
		-16,-28	-4.0	1.37			164
		-17,-34		1.37		L5A	54&55
		-16,-28		2.12		B4A	165
			-4.5	1.37			167
			-4.5	2.12			166
		-20,-31	-8.0	1.37			186
		-20,-31	-8.0	2.12			187
	5.0	-13,-26	0.0	2.83			251
		-16,-28		2.87		M9A	245
		-13,-26		3.58		B4A	252
		-16,-28	-1.0	2.87		M9A	246
			-1.0	3.62			247
			-1.75	2.87			248
			-1.75	3.62			249
		-16,-30	-2.5	1.37			250
			-2.5	2.12			251
			-3.5	1.37			252
			-3.5	2.12			253
		-16,-28	-4.0	1.37		B4A	231
		-16,-32				L5A	78&79
		-17,-32				M9A	254
		-16,-28		2.12		B4A	232
			-4.5	1.37			234
			-4.5	2.12			233
		-20,-31	-8.0	1.37			242
		-21,-34		1.37		M9A	255
		-20,-31		2.12		B4A	243
2.5	0.0	-13,-26	0.0	2.83			36
		-13,-26	0.0	3.58			37
		-16,-28	-4.0	1.37			45
			-4.0	2.12			46
			-4.5	1.37			48
			-4.5	2.12			47
		-20,-31	-8.0	1.37			56
		-20,-31	-8.0	2.12			57
	5.0	-13,-26	0.0	2.83			259

TABLE III (Concluded)

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
2.5	5.0	-13,-26	0.0	3.58	-	B4A	260
		-16,-28	-4.0	1.37			267
			-4.0	2.12			268
			-4.5	1.37			270
			-4.5	2.12			269
		-20,-31	-8.0	1.37			278
		-20,-31	-8.0	2.12			279

TABLE IV

FLOW FIELD SURVEY DATA - $N_1B_2W(P_2)_C$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-16,-24	0.5	2.83	–	B4A	130
			0.5	3.58			131
			0.0	2.83			133
		-17,-26		2.87		M9A	67
		-16,-24		3.58		B4A	132
		-17,-26		3.62		M9A	68
		-16,-24	-0.5	2.83		B4A	134
		-16,-24	-0.5	3.58		B4A	135
		-17,-26	-1.0	2.87		M9A	65
		-17,-26	-1.0	3.62		M9A	66
	5.0	-16,-24	0.5	2.83		B4A	198
			0.5	3.58			199
			0.0	2.83			201
		-17,-26		2.87		M9A	207
		-16,-24		3.58		B4A	200
		-17,-26		3.62		M9A	208
		-16,-24	-0.5	2.83		B4A	202
		-16,-24	-0.5	3.58		B4A	203
		-17,-26	-1.0	2.87		M9A	211
		-17,-26	-1.0	3.62		M9A	212
2.0	0.0	-16,-24	0.5	2.83		B4A	168
			0.5	3.58			169
			0.0	2.83			171
		-17,-26		2.87		M9A	289
		-16,-24		3.58		B4A	170
		-17,-26		3.62		M9A	290
		-16,-24	-0.5	2.83		B4A	172
		-16,-24	-0.5	3.58		B4A	173
		-17,-26	-1.0	2.87		M9A	291
		-17,-26	-1.0	3.62		M9A	292
	5.0	-16,-24	0.5	2.83		B4A	245
			0.5	3.58			246
			0.0	2.83			248
		-17,-26		2.87		M9A	241
		-16,-24		3.58		B4A	247
		-17,-26		3.62		M9A	242
		-16,-24	-0.5	2.83		B4A	249

TABLE IV (Concluded)

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
2.0	5.0	-16,-24	-0.5	3.58	-	B4A	250
		-17,-26	-1.0	2.87		M9A	243
		-17,-26	-1.0	3.62		M9A	244
2.5	0.0	-16,-24	0.5	2.83		B4A	29
			0.5	3.58			30
			0.0	2.83			32
			0.0	3.58			31
			-0.5	2.83			33
			-0.5	3.58			34
	5.0		0.5	2.83			253
			0.5	3.58			254
			0.0	2.83			256
			0.0	3.58			255
			-0.5	2.83			257
			-0.5	3.58			258

TABLE V

FLOW FIELD SURVEY DATA - $N_1B_2W(P_2)_{1/3}$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-17,-25	-3.5	1.37	-	B4A	138
			-3.5	2.12			156
			-4.0	1.37			139
		-16,-32		1.37		L5A	6&7
		-17,-25		2.12		B4A	157
			-4.5	1.37			140
			-4.5	2.12			141
	5.0		-3.5	1.37			206
			-3.5	2.12			207
			-4.0	1.37			209
		-16,-32		1.37		L5A	26,27&28
		-17,-25		2.12		B4A	208
			-4.5	1.37			210
			-4.5	2.12			211
2.0	0.0		-3.5	1.37			158
			-3.5	2.12			163
			-4.0	1.37			159
		-16,-32		1.37		L5A	47&48
		-17,-25		2.12		B4A	162
			-4.5	1.37			160
			-4.5	2.12			161
	5.0		-3.5	1.37			225
			-3.5	2.12			226
			-4.0	1.37			228
		-16,-32		1.37		L5A	76&77
		-17,-25		2.12		B4A	227
			-4.5	1.37			229
			-4.5	2.12			230
2.5	0.0		-3.5	1.37			39
			-3.5	2.12			44
			-4.0	1.37			40
			-4.0	2.12			43
			-4.5	1.37			41
			-4.5	2.12			42
	5.0		-3.5	1.37			261
			-3.5	2.12			262
			-4.0	1.37			264
			-4.0	2.12			263
			-4.5	1.37			265
			-4.5	2.12			266

TABLE VI

FLOW FIELD SURVEY DATA - $N_1B_2W(P_3)_{1/3}$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-17,-28	-3.5	1.37	-	M9A	84
			-3.5	2.12			85
			-4.0	1.37			80&81
			-4.0	2.12			82&83
			-4.75	1.37			86
			-4.75	2.12			87
	5.0		-3.5	1.37			229
			-3.5	2.12			230
			-4.0	1.37			225&226
			-4.0	2.12			227&228
			-4.75	1.37			231
			-4.75	2.12			232
2.0			-3.5	1.37			237
			-3.5	2.12			238
			-4.0	1.37			233&234
			-4.0	2.12			235&236
			-4.75	1.37			239
			-4.75	2.12			240

TABLE VII

FLOW FIELD SURVEY DATA - $N_1B_2W(P_2)_{2/3}$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-21,-29	-7.5	1.37	-	B4A	146
			-7.5	2.12			151
			-8.0	1.37			147
			-8.0	2.12			150
			-8.5	1.37			148
			-8.5	2.12			149
	5.0		-7.5	1.37			217
			-7.5	2.12			218
			-8.0	1.37			220
			-8.0	2.12			219
			-8.5	1.37			221
			-8.5	2.12			222
2.0	0.0		-7.5	1.37			180
			-7.5	2.12			185
			-8.0	1.37			181
			-8.0	2.12			184
			-8.5	1.37			182
			-8.5	2.12			183
	5.0		-7.5	1.37			238
			-7.5	2.12			239
			-8.0	1.37			236
			-8.0	2.12			237
			-8.5	1.37			240
			-8.5	2.12			241
2.5	0.0		-7.5	1.37			50
			-7.5	2.12			55
			-8.0	1.37			51
			-8.0	2.12			54
			-8.5	1.37			52
			-8.5	2.12			53
	5.0		-7.5	1.37			272
			-7.5	2.12			273
			-8.0	1.37			275
			-8.0	2.12			274
			-8.5	1.37			276
			-8.5	2.12			277

TABLE VIII

FLOW FIELD SURVEY DATA - $N_1B_2W(P_2)_{1/3}S_{DOC}$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-17,-32	-4.0	2.12	-	L5A	10&14
			-4.0	2.87			11&15
			-4.5	2.12			13&17
			-4.5	2.87			12&16
	5.0		-4.0	2.12			39&43
			-4.0	2.87			40&44
			-4.5	2.12			42&46
			-4.5	2.87			41&45
2.0	0.0	-17,-34	-4.0	2.12			64&68
			-4.0	2.87			65&69
			-4.5	2.12			67&71
			-4.5	2.87			66&70

TABLE IX

FLOW FIELD SURVEY DATA - $N_1B_2W(P_2)_{1/3}T$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-17,-32	-4.0	2.12	-	L5A	18&20
	0.0			2.87			19&21
	5.0			2.12			31&33
	5.0			2.87			32&34
2.0	0.0	-17,-34		2.12			56&58
2.0	0.0	-17,-34		2.87			57&59

TABLE X

FLOW FIELD SURVEY DATA - $N_1B_2W(P_2)_{1/3}TS_{DOC2}\ S_{DOC3}$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-17,-32	-4.0	2.12	-	L5A	22&24
	0.0			2.87			23&25
	5.0			2.12			35&37
	5.0			2.87			36&38
2.0	0.0	-17,-34		2.12			60&62
2.0	0.0	-17,-34		2.87			61&63

TABLE XI

FLOW FIELD SURVEY DATA - $N_3B_1A_3$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-1,-22	0.0	2.87	-	M9A	305
			0.0	3.62			306
			-1.0	2.87			307
			-1.0	3.62			308
			-1.75	2.87			309
			-1.75	3.62			310
			-2.5	0.62			311
			-2.5	1.37			312
			-3.5	0.62			313
			-3.5	1.37			314
			-4.0	0.62			315
			-4.0	1.37			316
	5.0		0.0	2.87			317
			0.0	3.62			318
			-1.0	2.87			319
			-1.0	3.62			320
			-1.75	2.87			321
			-1.75	3.62			322
			-2.5	0.62			323
			-2.5	1.37			324
			-3.5	0.62			325
			-3.5	1.37			326
			-4.0	0.62			327
			-4.0	1.37			328
2.0		-2,-22	0.0	2.87			362
			0.0	3.62			363
			-1.0	2.87			364
			-1.0	3.62			365
			-1.75	2.87			366
			-1.75	3.62			367
			-2.5	0.62			368
			-2.5	1.37			369
			-3.5	0.62			370
			-3.5	1.37			371
			-4.0	0.62			372
			-4.0	1.37			373

TABLE XII

FLOW FIELD SURVEY DATA - $N_3B_2WA_3$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-14,-24	0.0	2.30	-	V6A	99
				2.60			103
				2.87			106
		-15,-28		2.87		M9A	32
		-19,-24		3.25		V6A	108
		-15,-28		3.62		M9A	33
		-14,-24	-0.5	2.30		V6A	100
				2.60			104
				2.87			107
		-19,-24		3.25			109
		-14,-24	-1.0	2.30			101
		-14,-24		2.60			105
		-15,-28		2.87		M9A	34
		-19,-24		3.25		V6A	110
		-15,-28		3.62		M9A	35
		-14,-24	-1.75	2.30		V6A	102
		-15,-28		2.87		M9A	36
		-19,-24		3.25		V6A	111
		-15,-28		3.62		M9A	37
		-15,-30	-2.5	1.37		M9A	38
		-14,-24		1.75		V6A	112
		-15,-30		2.12		M9A	39
		-14,-24		2.30		V6A	113
		-15,-30	-3.5	1.37		M9A	40
		-15,-30	-3.5	2.12			41
		-16,-32	-4.0	1.37			42
		-16,-32	-4.0	2.12			43
		-20-,34	-8.0	1.37			44
		-20,-34	-8.0	2.12			45
	5.0	-14,-24	0.0	2.30		V6A	140
				2.60			144
				2.87			147
		-15,-28		2.87		M9A	178
		-19,-24		3.25		V6A	149
		-15,-28		3.62		M9A	179
		-14,-24	-0.5	2.30		V6A	141
				2.60			145
				2.87			148
		-19,-24		3.25			150
		-14,-24	-1.0	2.30			142
		-14,-24		2.60			146
		-15,-28		2.87		M9A	180
		-19,-24		3.25		V6A	151

TABLE XII (Continued)

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	5.0	-15,-28	-1.0	3.62	–	M9A	181
		-14,-24	-1.75	2.30		V6A	143
		-15,-28		2.87		M9A	182
		-19,-24		3.25		V6A	152
		-15,-28		3.62		M9A	183
		-15,-30	-2.5	1.37		M9A	184
		-14,-24		1.75		V6A	153
		-15,-30		2.12		M9A	185
		-14,-24		2.30		V6A	154
		-15,-30	-3.5	1.37		M9A	186
		-15,-30	-3.5	2.12			187
		-16,-32	-4.0	1.37			188
		-16,-32	-4.0	2.12			189
		-20,-34	-8.0	1.37			190
		-20,-34	-8.0	2.12			191
2.0	0.0	-14,-24	0.0	2.30		V6A	274
				2.60			278
				2.87			281
		-16,-28		2.87		M9A	293
		-19,-24		3.25		V6A	283
		-16,-28		3.62		M9A	294
		-14,-24	-0.5	2.30		V6A	275
				2.60			279
				2.87			282
		-19,-24		3.25			284
		-14,-24	-1.0	2.30			276
				2.60			280
		-16,-28		2.87		M9A	295
		-19,-24		3.25		V6A	285
		-16,-28		3.62		M9A	296
		-14,-24	-1.75	2.30		V6A	277
		-16,-28		2.87			293
		-14,-24		3.25			286
		-16,-28		3.62			294
		-16,-30	-2.5	1.37		M9A	297
		-14,-24		1.75		V6A	287
		-16,-30		2.12		M9A	298
		-14,-24		2.30		V6A	288
		-16,-30	-3.5	1.37			289
		-16,-30	-3.5	2.12			290
		-17,-32	-4.0	1.37			291
		-17,-32	-4.0	2.12			292
	5.0	-16,-28	0.0	2.87		M9A	264

TABLE XII (Concluded)

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
2.0	5.0	-16,-28	0.0	3.62	-	M9A	265
			-1.0	2.87			266
			-1.0	3.62			267
			-1.75	2.87			268
			-1.75	3.62			269
		-16,-30	-2.5	1.37			270
			-2.5	2.12			271
			-3.5	1.37			272
			-3.5	2.12			273
		-17,-32	-4.0	1.37			274
		-17,-32	-4.0	2.12			275
		-21,-34	-8.0	1.37			276
		-21,-34	-8.0	2.12			277

TABLE XIII

FLOW FIELD SURVEY DATA - $N_3B_2WA_3(P_2)_C$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-17,-26	0.0	2.87	—	M9A	56
			0.0	3.62			57
			-1.0	2.87			58
			-1.0	3.62			59
	5.0		0.0	2.87			174
			0.0	3.62			175
			-1.0	2.87			176
			-1.0	3.62			177
2.0			0.0	2.87			260
			0.0	3.62			261
			-1.0	2.87			262
			-1.0	3.62			263

TABLE XIV

FLOW FIELD SURVEY DATA - $N_3B_2WA_3(P_3)_{1/3}$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-17,-28	-3.5	1.37	—	M9A	46
			-3.5	2.12			47
			-4.0	1.37			50 & 51
			-4.0	2.12			52 & 53
			-4.75	1.37			48
			-4.75	2.12			49
	5.0		-3.5	1.37			196
			-3.5	2.12			197
			-4.0	1.37			192&193
			-4.0	2.12			194&195
			-4.75	1.37			198
			-4.75	2.12			199
2.0			-3.5	1.37			282
			-3.5	2.12			283
			-4.0	1.37			278&279
			-4.0	2.12			280&281
			-4.75	1.37			284
			-4.75	2.12			285

TABLE XV

FLOW FIELD SURVEY DATA - $N_3B_2WA_3F$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-19,-25	0.0	2.30	—	V6A	118
				2.60			121
				2.87			126
				3.25			127
			-0.5	2.30			119
				2.60			122
				2.87			125
				3.25			128
			-1.0	2.30			120
				2.60			123
				2.87			124
				3.25			129
		-14,-24	-1.75	2.30			131
		-14,-24	-1.75	2.87			133
		-15,-24	-4.0	1.37			135
	5.0	-19,-25	0.0	2.30			156
				2.60			159
				2.87			164
				3.25			165
			-0.5	2.30			157
				2.60			160
				2.87			163
				3.25			166
			-1.0	2.30			158
				2.60			161
				2.87			162
				3.25			167
		-14,-24	-1.75	2.30			169
		-14,-24	-1.75	2.87			171
		-15,-24	-4.0	1.37			173
2.0	0.0	-19,-25	0.0	2.30			296
				2.60			299
				2.87			304
				3.25			305
			-0.5	2.30			297
				2.60			300
				2.87			303
				3.25			306

TABLE XV (Concluded)

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
2.0	0.0	-19,-25	-1.0	2.30	—	V6A	298
				2.60			301
				2.87			302
				3.25			307
		-14,-24	-1.75	2.30			309
		-14,-24	-1.75	2.87			311
		-15,-24	-4.0	1.37			313

TABLE XVI

FLOW FIELD SURVEY DATA - $N_3B_2WA_4$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-14,-24	0.0	2.30	0.81	V6A	52
				2.60			58
				2.87			61
		-14,-22				M9A	18
		-14,-24				T9A	141
		-19,-24		3.25		V6A	62
		-14,-24		3.62		T9A	146
			-0.5	2.30		V6A	53
				2.60			59
				2.87			60
		-19,-24		3.25			63
		-14,-24	-1.0	2.30			54
				2.60			70
				2.87		T9A	142
		-19,-24		3.25		V6A	64
		-14,-24		3.62		T9A	145
			-1.75	2.30		V6A	55
				2.87		T9A	143
		-19,-24		3.25		V6A	65
		-14,-24		3.62		T9A	144
		-14,-22	-2.0	2.87		M9A	19
		-14,-26	-2.5	2.30		V6A	56
		-14,-22		2.87		M9A	20
		-14,-26		2.87		V6A	71
		-19,-26		3.25			66
		-14,-26		3.62			72
			-3.0	2.30			57
				2.87			68
		-19,-26		3.25			67
		-14,-26	-3.5	1.37			74
		-14,-22		1.37		M9A	21
		-14,-26		2.12		V6A	75
		-15,-28	-4.0	1.37		V6A	76
		-14,-22		1.37		M9A	22
		-15,-28		2.12		V6A	77
		-14,-22	0.0	2.87	1.63	M9A	10
			-2.0				11
			-2.5				12
			-3.5	1.37			13
			-4.0	1.37			14
			0.0	2.87	3.25		15
			-2.0				16
			-2.5				17

TABLE XVI (Continued)

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-14,-24	0.0	2.87	OFF	T9A	48
			0.0	3.62			53
			-1.0	2.87			49
			-1.0	3.62			52
			-1.75	2.87			50
			-1.75	3.62			51
		-14,-26	-2.5	2.87			54
			-2.5	3.62			55
			-3.5	1.37			56
			-3.5	2.12			57
		-15,-28	-4.0	1.37			58
		-15,-28	-4.0	2.12			59
		-19,-30	-8.0	1.37			60
		-19,-30	-8.0	2.12			61
	5.0	-14,-24	0.0	2.30	0.81	V6A	4
				2.60			10
				2.87			13
				2.87		T9A	25
		-19,-24		3.25		V6A	14
		-14,-24		3.62		T9A	30
			-0.5	2.30		V6A	5
				2.60			11
				2.87			12
		-19,-24		3.25			15
		-14,-24	-1.0	2.30			6
				2.60			22
				2.87		T9A	26
		-19,-24		3.25		V6A	16
		-14,-24		3.62		T9A	29
			-1.75	2.30		V6A	7
				2.87		T9A	27
		-19,-24		3.25		V6A	17
		-14,-24		3.62		T9A	28
		-14,-26	- 2.5	2.30		V6A	8
		-14,-26		2.87		T9A	44
		-19,-26		3.25		V6A	18
		-14,-26		3.62		T9A	45
			-3.0	2.30		V6A	9
				2.87			20
		-19,-26		3.25			19
		-14,-26	-3.5	1.37		T9A	42
		-14,-26	-3.5	2.12			43
		-15,-28	-4.0	1.37			35

TABLE XVI (Concluded)

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	5.0	-15,-28	-4.0	2.12	0.81	T9A	36
		-19,-30	-8.0	1.37			37
		-19,-30	-8.0	2.12			38

TABLE XVII

FLOW FIELD SURVEY DATA - $N_3B_2WA_4(P_2)_{\hat{c}}$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-14,-24	0.0	2.87	0.81	T9A	137
			0.0	3.62			138
			-1.0	2.87			139
			-1.0	3.62			140
	5.0		0.0	2.87			19
			0.0	3.62			20
			-1.0	2.87			21
			-1.0	3.62			22

TABLE XVIII

FLOW FIELD SURVEY DATA - $N_3B_2WA_4(P_3)_{1/3}$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-15,-28	-3.5	1.37	0.81	T9A	129
			-3.5	2.12			130
			-4.0	1.37			131&133
			-4.0	2.12			132&134
	5.0		-3.5	1.37			10
			-3.5	2.12			14
			-4.0	1.37			15 & 17
			-4.0	2.12			16 & 18
			-4.75	1.37			12
			-4.75	2.12			13

TABLE XIX

FLOW FIELD SURVEY DATA - $N_3B_2WA_4F$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	-19,-25	0.0	2.30	0.81	V6A	79
				2.60			82
				2.87			88
				3.25			89
			-0.5	2.30			80
				2.60			83
				2.87			86
				3.25			90
			-1.0	2.30			81
				2.60			84
				2.87			85
				3.25			91
		-14,-24	-1.75	2.30			93
		-14,-24	-1.75	2.87			95
		-15,-24	-4.0	1.37			97
	5.0	-19,-25	0.0	2.30			30
				2.60			33
				2.87			38
				3.25			39
			-0.5	2.30			31
				2.60			34
				2.87			37
				3.25			40
			-1.0	2.30			32
				2.60			35
				2.87			36
				3.25			41
		-14,-24	-1.75	2.30			44
		-14,-24	-1.75	2.87			46

TABLE XX

FLOW FIELD SURVEY DATA - $N_3B_2WA_5$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
2.0	0.0	-14,-24	0.0	2.30	0.81	V6A	222
				2.60			228
				2.87			231
		-14,-22				M9A	160
		-14,-24				T9A	107
		-19,-24		3.25		V6A	232
		-14,-24		3.62		T9A	112
			-0.5	2.30		V6A	223
				2.60			229
				2.87			230
		-19,-24		3.25			233
		-14,-24	-1.0	2.30			224
				2.60			240
				2.87		T9A	108
		-19,-24		3.25		V6A	234
		-14,-24		3.62		T9A	111
			-1.75	2.30		V6A	225
				2.87		T9A	109
		-19,-24		3.25		V6A	235
		-14,-24		3.62		T9A	110
		-14,-22	-2.0	2.87		M9A	161
		-14,-26	-2.5	2.30		V6A	226
		-14,-22		2.87		M9A	162
		-14,-26		2.87		T9A	113
		-19,-26		3.25		V6A	236
		-14,-26		3.62		T9A	114
			-3.0	2.30		V6A	227
				2.87			238
		-19,-26		3.25			237
		-14,-22	-3.5	1.37		M9A	163
		-14,-26		1.37		T9A	115
		-14,-26		2.12		T9A	116
		-14,-22	-4.0	1.37		M9A	164
		-15,-28		1.37		T9A	117
		-15,-28		2.12		T9A	118
		-14,-22	0.0	2.87	1.63	M9A	150
			-2.0				151
			-2.5				152
			-3.5	1.37			153
			-4.0	1.37			154
			0.0	2.87	3.25		155
			-2.0				156
			-2.5				157

TABLE XX (Concluded)

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
2.0	5.0	-14,-24	0.0	2.30	0.81	V6A	176
				2.60			182
				2.87			185
				2.87		T9A	83
		-19,-24		3.25		V6A	186
		-14,-24		3.62		T9A	88
			-0.5	2.30		V6A	177
				2.60			183
				2.87			184
		-19,-24		3.25			187
		-14,-24	-1.0	2.30			178
				2.60			194
				2.87		T9A	84
		-19,-24		3.25		V6A	188
		-14,-24		3.62		T9A	87
			-1.75	2.30		V6A	179
				2.87		T9A	85
		-19,-24		3.25		V6A	189
		-14,-24		3.62		T9A	86
		-14,-26	-2.5	2.30		V6A	180
		-14,-26		2.87		T9A	89
		-19,-26		3.25		V6A	190
		-14,-26		3.62		T9A	90
			-3.0	2.30		V6A	181
				2.87			192
		-19,-26		3.25			191
		-14,-26	-3.5	1.37		T9A	93
		-14,-26	-3.5	2.12			94
		-15,-28	-4.0	1.37			95
		-15,-28	-4.0	2.12			96
		-19,-30	-8.0	1.37			97
		-19,-30	-8.0	2.12			98

TABLE XXI

FLOW FIELD SURVEY DATA - $N_3B_2WA_5(P_2)_c$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GR[illegible] NO.
2.0	0.0	-14, -24	0.0	2.87	0.81	T9A	103
			0.0	3.62			104
			-1.0	2.87			105
			-1.0	3.62			106
	5.0		0.0	2.87			77
			0.0	3.62			78
			-1.0	2.87			79
			-1.0	3.62			80

TABLE XXII

FLOW FIELD SURVEY DATA - $N_3B_2WA_5(P_3)_{1/3}$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
2.0	0.0	-15, -28	-3.5	1.37	0.81	T9A	121
			-3.5	2.12			122
			-4.0	1.37			123&125
			-4.0	2.12			124&126
	5.0		-3.5	1.37			66
			-3.5	2.12			69
			-4.0	1.37			70 & 72
			-4.0	2.12			71 & 73
			-4.75	1.37			67
			-4.75	2.12			68

TABLE XXIII

FLOW FIELD SURVEY DATA - $N_3B_2WA_5F$

1	2	3	4	5	6	7	8
M_∞	α	X_P RANGE	Y_P	Z_P	ℓ_P	TEST NO.	GROUP NO.
2.0	0.0	-19,-25	0.0	2.30	0.81	V6A	244
				2.60			247
				2.87			252
				3.25			253
			-0.5	2.30			245
				2.60			248
				2.87			251
				3.25			254
			-1.0	2.30			246
				2.60			249
				2.87			250
				3.25			257
		-14,-24	-1.75	2.30			259
		-14,-24	-1.75	2.87			261
		-15,-24	-4.0	1.37			263
	5.0	-19,-25	0.0	2.30			201
				2.60			204
				2.87			209
				3.25			210
			-0.5	2.30			202
				2.60			205
				2.87			208
				3.25			211
			-1.0	2.30			203
				2.60			206
				2.87			207
				3.25			212
		-14,-24	-1.75	2.30			214
		-14,-24	-1.75	2.87			216
		-15,-24	-4.0	1.37			218

TABLE XXIV

SUMMARY OF PRESSURE DISTRIBUTION
DATA ON STORE S_P

Parent Aircraft Configuration	Test Conditions Table Number
None	XXV
N_1B_2W	XXVI
$N_1B_2W(P_2)_c$	XXVII
$N_1B_2W(P_2)_{1/3}$	XXVIII
$N_1B_2W(P_3)_{1/3}$	XXIX
$N_1B_wW(P_2)_{2/3}$	XXX
$N_1B_2W(P_2)_{1/3}T$	XXXI
$N_1B_2W(P_2)_{1/3}TS_{DOC2}S_{DOC3}$	XXXII
$N_3B_2WA_3$	XXXIII
$N_3B_2WA_4$	XXXIV
$N_3B_2WA_4(P_3)_{1/3}$	XXXV
$N_3B_2WA_5$	XXXVI
$N_3B_2WA_5(P_3)_{1/3}$	XXXVII

TABLE XXV

S_P PRESSURE DISTRIBUTION DATA - STORE ALONE

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_S	β_S	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
1.5	-	0.0	0.0	-	-	-	-	B4A	346
		0.0						M9A	446
		2.0						M9A	447
		2.5						B4A	347
		4.0						M9A	448
		5.0						B4A	348
		6.0						M9A	449
		7.5						B4A	349
		10.0							350
2.0		0.0							322
		2.5							323
		5.0							324
		7.5							325
		10.0							326
2.5		0.0							297
		2.5							298
		5.0							299
		7.5							300
		10.0							301

TABLE XXVI

S_P PRESSURE DISTRIBUTION DATA - N_1B_2W

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_s	β_s	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	0.0	0.0	0.0	0.0	0.10	-	B4A	351
						0.37			352
						0.75			353
						1.50		T9A	186
						3.00			187
				7.0		0.10			188
						0.75			189
						1.50			190
						2.25			191
						3.00			192
				0.0	-4.0	0.10		B4A	357
						0.10		M9A	411
						0.37		B4A	358
						0.75		B4A	359
						0.75		M9A	412
						1.50			413
						2.25			414
						3.00			415
				4.0		0.75			419
				-4.0					420
				-8.0					421
		-10.0		0.0					424
		10.0							425
		0.0	-10.0						427
			10.0						428
			0.0		-4.75	0.10			416
						0.75			417
						2.25			418
	5.0	5.0			0.0	0.10		B4A	366
						0.37			367
						0.75			368
					-4.0	0.10			372
						0.10		M9A	465
						0.37		B4A	373
						0.75		B4A	374
						0.75		M9A	466
						1.50			467
						2.25			468
						3.00			469
				4.0		0.75			473
				-4.0					474
				-8.0					475
				0.0	-4.75	0.10			470

TABLE XXVI (Continued)

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_s	β_s	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
1.5	5.0	5.0	0.0	0.0	-4.75	0.75	-	M9A	471
					-4.75	2.25		M9A	472
					-8.0	0.10		B4A	378
						0.37			379
						0.75			380
2.0	0.0	0.0			0.0	0.10			327
						0.37			328
						0.75			329
					-4.0	0.10			334
						0.37			335
						0.75			336
						1.50		T9A	241
						3.00			242
		-10.0				0.75			243
		10.0							244
		0.0	-10.0						245
			10.0						246
			0.0		-8.0	0.10		B4A	340
						0.37			341
						0.75			342
	5.0	5.0			0.0	0.10			384
						0.37			385
						0.75			386
					-4.0	0.10			390
						0.37			391
						0.75			392
					-8.0	0.10			396
						0.37			397
						0.75			398
2.5	0.0	0.0			0.0	0.10			302
						0.37			303
						0.75			304
					-4.0	0.10			308
						0.37			309
						0.75			310
					-8.0	0.10			316
						0.37			317
						0.75			318
	5.0	5.0			0.0	0.10			402
						0.37			403
						0.75			404
					-4.0	0.10			408
					-4.0	0.37			409

TABLE XXVI (Concluded)

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_S	β_S	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
2.5	5.0	5.0	0.0	0.0	-4.0	0.75	-	B4A	410
					-8.0	0.10			414
						0.37			415
						0.75			416

TABLE XXVII

S_P PRESSURE DISTRIBUTION DATA - $N_1B_2W(P_2)_c$

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_S	β_S	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	0.0	0.0	0.0	0.0	0.10	-	B4A	343
						0.37			344
						0.75			345
						1.50		T9A	184
						3.00		T9A	185
	5.0	5.0				0.10		B4A	363
						0.37			364
						0.75			365
						1.50		T9A	194
						3.00		T9A	195
2.0	0.0	0.0				0.10		B4A	319
						0.37			320
						0.75			321
	5.0	5.0				0.10			381
						0.37			382
						0.75			383
2.5	0.0	0.0				0.10			294
						0.37			295
						0.75			296
	5.0	5.0				0.10			399
						0.37			400
						0.75			401

TABLE XXVIII

S_P PRESSURE DISTRIBUTION DATA - $N_1B_2W(P_2)_{1/3}$

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_S	β_S	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	0.0	0.0	0.0	-4.0	0.10	-	B4A	354
						0.37			355
						0.75			356
						1.50		T9A	177
						3.00		T9A	178
	5.0	5.0				0.10		B4A	369
						0.37			370
						0.75			371
2.0	0.0	0.0				0.10			331
						0.37			332
	5.0	5.0				0.10			387
						0.37			388
						0.75			389
2.5	0.0	0.0				0.10			305
						0.37			306
						0.75			307
	5.0	5.0				0.10			405
						0.37			406
						0.75			407

TABLE XXIX

S_P PRESSURE DISTRIBUTION DATA - $N_1B_2W(P_3)_{1/3}$

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_s	β_s	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	0.0	0.0	0.0	-4.0	0.10	–	M9A	398
						0.75			399
						1.50			400
						2.25			401
						3.00			402
					-4.75	0.10			408
						0.75			409
						1.50			410
						2.25			406
						3.00			407
	5.0	5.0			-4.0	0.10			455
						0.75			456
						1.50			457
						2.25			458
						3.00			459
					-4.75	0.10			460
						0.75			461
						1.50			462
						2.25			463
						3.00			464
2.0	0.0	0.0			-4.0	0.10		T9A	236
						0.75			237
						1.50			238
						2.25			239
						3.00			240

TABLE XXX

S_P PRESSURE DISTRIBUTION DATA - $N_1B_2W(P_2)_{2/3}$

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_s	β_s	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	0.0	0.0	0.0	-8.0	0.10	-	B4A	360
						0.37			361
						0.75			362
	5.0	5.0				0.10			375
						0.37			376
						0.75			377
2.0	0.0	0.0				0.10			337
						0.37			338
						0.75			339
	5.0	5.0				0.37			393
						0.37			394
						0.75			395
2.5	0.0	0.0				0.10			311
						0.37			312
						0.75			313
	5.0	5.0				0.10			411
						0.37			412
						0.75			413

TABLE XXXI

S_P PRESSURE DISTRIBUTION DATA - $N_1B_2W(P_2)_{1/3}T$

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_s	β_s	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	0.0	0.0	0.0	-4.0	0.10	---	T9A	179
						0.75			180
						1.50			181
						2.25			182
						3.00			183
	5.0	5.0				0.10		M9A	476
						0.75			477
						1.50			478
						2.25			479
						3.00			480

TABLE XXXII

S_P PRESSURE DISTRIBUTION DATA - $N_1B_2W(P_2)_{1/3}T\ S_{DOC2}S_{DOC3}$

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_s	β_s	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	0.0	0.0	0.0	-4.0	0.10	---	M9A	429
						0.75			430
						1.50			431
						2.25			432
						3.00			433
	5.0	5.0				0.10			450
						0.75			451
						1.50			452
						2.25			453
						3.00			454

TABLE XXXIII

S_P PRESSURE DISTRIBUTION DATA - $N_3B_2WA_3$

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_s	β_s	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	0.0	0.0	0.0	0.0	0.10	---	M9A	434
						0.75			435
						1.50			436
					-4.0	0.10			437
						0.75			438
						1.50			439
	5.0	5.0			0.0	0.10			440
						0.75			441
						1.50			442
					-4.0	0.10			443
						0.75			444
						1.50			445
2.0	0.0	0.0			0.0	0.10		T9A	233
						0.75			234
						1.50			235
					-4.0	0.10			230
						0.75			231
						1.50			232

TABLE XXXIV

S_P PRESSURE DISTRIBUTION DATA - $N_3B_2WA_4$

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_s	β_s	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	0.0	0.0	0.0	0.0	0.10	0.81	T9A	171
						1.50			172
						3.00			173
					-4.0	0.10			168
						1.50			169
						3.00			170
	5.0	5.0			0.0	0.10			160
						1.50			162
						3.00			161
					-4.0	0.10			157
						1.00			159
						3.00			158

TABLE XXXV

S_P PRESSURE DISTRIBUTION DATA - $N_3B_2WA_4(P_3)_{1/3}$

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_s	β_s	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
1.5	0.0	0.0	0.0	0.0	-4.0	0.10	0.81	T9A	164
						0.75			165
						1.50			166
						3.00			167
	5.0	5.0				0.10			153
						0.75			154
						1.50			155
						3.00			156

TABLE XXXVI

S_P PRESSURE DISTRIBUTION DATA - $N_3B_2WA_5$

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_s	β_s	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
2.0	0.0	0.0	0.0	0.0	0.0	0.10	0.81	T9A	213
						1.50			214
						3.00			215
					-4.0	0.10			221
						1.50			222
						3.00			223
	5.0	5.0			0.0	0.10			210
						1.50			212
						3.00			211
					-4.0	0.10			204
						1.50			206
						3.00			205

TABLE XXXVII

S_P PRESSURE DISTRIBUTION DATA - $N_3B_2WA_5(P_3)_{1/3}$

1	2	3	4	5	6	7	8	9	10
M_∞	α_P	α_s	β_s	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
2.0	0.0	0.0	0.0	0.0	-4.0	0.10	0.81	T9A	217
						0.75			218
						1.50			219
						3.00			220
	5.0	5.0				0.10			200
						0.75			201
						1.50			202
						3.00			203

TABLE XXXVIII

SUMMARY OF PRESSURE DISTRIBUTION DATA ON STORE S_{EP}

Parent Aircraft Configuration	Test Conditions Table Number
None	XXXIX
$N_1B_2W(P_2)_c$	XL
$N_1B_2W(P_2)_{1/3}$	XLI
$N_3B_2WA_3$	XLII
$N_3B_2WA_3(P_2)_c$	XLIII
$N_3B_2WA_3F$	XLIV
$N_3B_2WA_4$	XLV
$N_3B_2WA_4(P_2)_c$	XLVI
$N_3B_2WA_4F$	XLVII

TABLE XXXIX

S_{EP} PRESSURE DISTRIBUTION DATA - STORE ALONE

1	2	3	4	5	6	7	8	9
				PRESSURE DATA GROUP NUMBERS				
M_∞	α_{c_s}	ϕ_s	TEST NO.	SEP1 $\phi=\phi_s$	SEP1 $\phi=\phi_s+180$	SEP2 $\phi=\phi_s$	SEP2 $\phi=\phi_s+180$	INT. GROUP NO.
1.5	0.0	0.0	V6A	804	783	861	989	1
	2.5			805	782	862	988	2
	5.0			806	781	863	987	3
	7.5			807	780	864	986	4
	10.0			808	779	865	985	5
	12.5			809	778	866	984	6
	15.0			513	777	867	983	7
	0.0	22.5		581	784	947	1019	8
	2.5			580	718	946	1020	9
	5.0			579	719	945	1021	10
	7.5			578	720	944	1022	11
	10.0			577	721	943	1023	12
	12.5			576	722	942	1024	13
	15.0			575	723	941	1025	14
	0.0	45.0		582	730	948	1061	15
	2.5			583	729	949	1060	16
	5.0			584	728	950	1059	17
	7.5			585	727	951	1058	18
	10.0			586	726	952	1057	19
	12.5			587	725	953	1056	20
	15.0			588	724	954	1055	21
	0.0	67.5		702	731	961	1062	22
	2.5			701	732	960	1063	23
	5.0			700	733	959	1064	24
	7.5			699	734	958	1065	25
	10.0			698	735	957	1066	26
	12.5			697	736	956	1067	27
	15.0			696	737	955	1068	28
	0.0	90.0		703	744	976	1075	29
	2.5			704	743	977	1074	30
	5.0			705	742	978	1073	31
	7.5			706	741	979	1072	32
	10.0			707	740	980	1071	33
	12.5			708	739	981	1070	34
	15.0			709	738	982	1069	35

TABLE XL

S_{EP} PRESSURE DISTRIBUTION DATA - $N_1B_2W(P_2)_c$

1	2	3	4	5	6	7	8	9	PRESSURE DATA GROUP NUMBERS				14
M_∞	α_P	α_S	β_S	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	S_{EP1} $\phi=0°$	S_{EP1} $\phi=180°$	S_{EP2} $\phi=0°$	S_{EP2} $\phi=180°$	INT. GROUP NO.
1.5	0.0	0.0	0.0	0.0	0.0	0.10	-	V6A	748	759	1077	1088	120
						0.75			747	761	1090	1089	121
						1.50			749	758	1078	1087	122
						2.25			750	757	1079	1086	123
						3.00			751	756	1080	1085	124
						3.75			752	755	1081	1084	125
						4.50			753	754	1082	1083	126
	5.0	5.0				0.10			812	823	1127	1138	127
						0.75			811	824	1126	1139	128
						1.50			813	822	1128	1137	129
						2.25			814	821	1129	1136	130
						3.00			815	820	1130	1135	131
						3.75			816	819	1131	1134	132
						4.50			817	818	1132	1133	133

TABLE XLI

S_{EP} PRESSURE DISTRIBUTION DATA - $N_1B_2W(P_2)_{1/3}$

1	2	3	4	5	6	7	8	9	PRESSURE DATA GROUP NUMBERS				14
M_∞	α_P	α_S	β_S	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	S_{EP1} $\phi=0°$	S_{EP1} $\phi=180°$	S_{EP2} $\phi=0°$	S_{EP2} $\phi=180°$	INT. GROUP NO.
1.5	0.0	0.0	0.0	0.0	-4.0	0.10	-	V6A	846	857	1092	1109	134
						0.75			845	858	1105	1110	135
						1.50			847	856	1093	1108	136
						2.25			848	855	1094	1107	137
						3.00			859	854	1095	1106	138
						3.75			860	853	1096	1099	139
						4.50			851	852	1097	1098	140
	5.0	5.0				0.10			832	843	1112	1123	141
						0.75			831	844	1111	1125	142
						1.50			833	842	1113	1122	143
						2.25			834	841	1114	1121	144
						3.00			835	840	1115	1120	145
						3.75			836	839	1116	1119	146
						4.50			837	838	1117	1118	147

TABLE XLII

S_{EP} PRESSURE DISTRIBUTION DATA - $N_3B_2WA_3$

1	2	3	4	5	6	7	8	9	PRESSURE DATA GROUP NUMBERS				14
M_∞	α_P	α_S	β_S	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	S_{EP1} ϕ=0°	S_{EP1} ϕ=180°	S_{EP2} ϕ=0°	S_{EP2} ϕ=180°	INT. GROUP NO.
1.5	0.0	0.0	0.0	0.0	0.0	0.10	-	V6A	668	679	1027	1038	106
						0.75			695	680	1054	1039	107
						1.50			669	678	1028	1037	108
						2.25			670	677	1029	1036	109
						3.00			671	676	1030	1035	110
						3.75			672	675	1031	1034	111
						4.50			673	674	1032	1033	112
				-2.0		0.10			693	682	1052	1041	113
						0.75			694	681	1053	1040	114
						1.50			692	683	1051	1042	115
						2.25			691	684	1050	1043	116
						3.00			690	685	1049	1044	117
						3.75			689	686	1048	1045	118
						4.50			688	687	1047	1046	119

TABLE XLIII

S_{EP} PRESSURE DISTRIBUTION DATA - $N_3B_2WA_3(P_2)_c$

1	2	3	4	5	6	7	8	9	PRESSURE DATA GROUP NUMBERS				14
M_∞	α_P	α_s	β_s	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	S_{EP1} $\phi=0°$	S_{EP1} $\phi=180°$	S_{EP2} $\phi=0°$	S_{EP2} $\phi=180°$	INT. GROUP NO.
1.5	0.0	0.0	0.0	0.0	0.0	0.10	-	V6A	624	635	963	974	78
						0.75			623	637	962	975	79
						1.50			625	634	964	973	80
						2.25			626	633	965	972	81
						3.00			627	632	966	971	82
						3.75			628	631	967	970	83
						4.50			629	630	968	969	84
	5.0	5.0				0.10			786	797	1157	1168	85
						0.75			799	798	1170	1169	86
						1.50			787	796	1158	1167	87
						2.25			788	795	1159	1166	88
						3.00			789	794	1160	1165	89
						3.75			790	793	1161	1164	90
						4.50			791	792	1162	1163	91

TABLE XLIV

S_{EP} PRESSURE DISTRIBUTION DATA - $N_3B_2WA_3F$

1	2	3	4	5	6	7	8	9	PRESSURE DATA GROUP NUMBERS				14
M_∞	α_P	α_S	δ_S	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	S_{EP1} $\phi=0°$	S_{EP1} $\phi=180°$	S_{EP2} $\phi=0°$	S_{EP2} $\phi=180°$	INT. GROUP NO.
1.5	0.0	0.0	0.0	0.0	0.0	0.10	-	V6A	639	650	991	1002	92
						0.75			666	651	1018	1003	93
						1.50			640	649	992	1001	94
						2.25			641	648	993	1000	95
						3.00			642	647	994	999	96
						3.75			643	646	995	998	97
						4.50			644	645	996	997	98
				-2.0		0.10			664	653	1016	1005	99
						0.75			665	652	1017	1004	100
						1.50			663	654	1015	1006	101
						2.25			662	655	1014	1007	102
						3.00			661	656	1013	1008	103
						3.75			660	657	1012	1009	104
						4.50			659	658	1011	1010	105

TABLE XLV

S_{EP} PRESSURE DISTRIBUTION DATA - $N_3B_2WA_4$

1	2	3	4	5	6	7	8	9	PRESSURE DATA GROUP NUMBERS				14
M_∞	α_P	α_S	β_S	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	S_{EP1} $\phi=0°$	S_{EP1} $\phi=180°$	S_{EP2} $\phi=0°$	S_{EP2} $\phi=180°$	INT. GROUP NO.
1.5	0.0	0.0	0.0	0.0	0.0	0.10	0.81	V6A	548	559	913	924	64
						0.75			547	560	940	925	65
						1.50			549	558	914	923	66
						2.25			550	557	915	922	67
						3.00			551	556	916	921	68
						3.75			552	555	917	920	69
						4.50			553	554	918	919	70
				-2.0		0.10			573	562	938	927	71
						0.75			574	561	939	926	72
						1.50			572	563	937	928	73
						2.25			571	564	936	929	74
						3.00			570	565	935	930	75
						3.75			569	566	934	931	76
						4.50			568	567	933	932	77

TABLE XLVI

S_{EP} PRESSURE DISTRIBUTION DATA - $N_3B_2WA_4(P_2)_c$

1	2	3	4	5	6	7	8	9	PRESSURE DATA GROUP NUMBERS				14
M_∞	α_P	α_s	β_s	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	S_{EP1} $\phi=0°$	S_{EP1} $\phi=180°$	S_{EP2} $\phi=0°$	S_{EP2} $\phi=180°$	INT. GROUP NO.
1.5	0.0	0.0	0.0	0.0	0.0	0.10	0.81	V6A	493	504	869	880	36
						0.75			506	505	868	881	37
						1.50			494	503	870	879	38
						2.25			495	502	871	878	39
						3.00			496	501	872	877	40
						3.75			497	500	873	876	41
						4.50			498	499	874	875	42
	5.0	5.0				0.10			764	775	1142	1153	43
						0.75			763	776	1155	1154	44
						1.50			765	774	1143	1152	45
						2.25			766	773	1144	1151	46
						3.00			767	772	1145	1150	47
						3.75			768	771	1146	1149	48
						4.50			769	770	1147	1148	49

TABLE XLVII

S_{EP} PRESSURE DISTRIBUTION DATA - $N_3B_2WA_4F$

1	2	3	4	5	6	7	8	9	PRESSURE DATA GROUP NUMBERS				14
M_∞	α_P	α_S	β_S	ΔX_P	Y_P	ΔZ_P	ℓ_P	TEST NO.	S_{EP1} $\phi=0°$	S_{EP1} $\phi=180°$	S_{EP2} $\phi=0°$	S_{EP2} $\phi=180°$	INT. GROUP NO.
1.5	0.0	0.0	0.0	0.0	0.0	0.10	0.81	V6A	520	531	883	896	50
						0.75			519	532	882	897	51
						1.50			521	530	884	894	52
						2.25			522	529	885	893	53
						3.00			523	528	886	891	54
						3.75			524	527	887	890	55
						4.50			525	526	888	889	56
				-2.0		0.10			545	534	910	899	57
						0.75			546	533	911	898	58
						1.50			544	535	909	900	59
						2.25			543	536	908	901	60
						3.00			542	537	907	902	61
						3.75			541	538	906	903	62
						4.50			540	539	905	904	63

TABLE XLVIII

SUMMARY OF FORCE AND MOMENT TESTS

STORE TESTED	TEST CONDITIONS TABLE NUMBER
Isolated Store Data for all Stores	XLIX
S_{LFN}	L
S_{LFF}	LI
S_{COC}	LII
S_{POC}	LIII
S_{TOC}	LIV
S_E	LV

TABLE XLIX

ISOLATED STORE FORCE AND MOMENT DATA

1	2	3	4	5	6	7	8	9	10
STORE	M_∞	ϕ_s	α_s	β_s	X_T	Y_T	Z_T	TEST NO.	GROUP NO.
S_{LFN}	1.5	0.0	AA	0.0	--	--	--	B4A	437
	1.5		CA					T9A	312
	2.0		BA					B4A	428
			CA					T9A	374
			CA						387
			DA						388
	2.5		AA					B4A	420
S_{LFF}	1.5		AA						467
	1.5		BA						469
	2.0							L5A	100
									104
									105
	2.5								118
									119
									120
									121
S_{COC}	1.5		LA		17.0	0.0	3.0	M9A	1030
			BA		10.0		-1.0	M9A	1031
			MA					T9A	252
			NA						253
		11.25							254
		22.50							255
		33.75							256
		45.00							257
		56.25							258
		67.50							259
		78.75							260
		90.00							261
	1.63	0.0	0.0		17.0	-1.5	AZT	M9A	514
					15.5				515
					14.0				516
					12.5				517
					11.0				518
					9.5				519
					8.0	0.0			520
					8.0				521
					9.5				522
					11.0				523
					12.5				524
					14.0				525
					15.5				526
					17.0				527
					17.0	1.5			528

TABLE XLIX (Continued)

1	2	3	4	5	6	7	8	9	10
STORE	M_∞	ϕ_s	α_s	β_s	X_T	Y_T	Z_T	TEST NO.	GROUP NO.
S_{COC}	1.63	0.0	0.0	0.0	15.5	1.5	AZT	M9A	529
					14.0				530
					12.5				531
					11.0				532
					9.5				533
					8.0				534
					8.0	3.0			535
					9.5				536
					11.0				537
					12.5				538
					14.0				539
					15.5				540
					17.0				541
					17.0	6.0			542
					15.5				543
					14.0				544
					12.5				545
					11.0				546
					9.5				547
					8.0				548
				FB	17.0	0.0	0.0		550
				FB			3.0		552
				GB			3.0		807
			LA	0.0			0.0		549
							3.0		551
							3.0		806
			BA		--	--	--	V6A	314
			0.0	DB				V6A	315
	2.0		NA	0.0				T9A	313
		11.25							314
		22.50							315
		33.75							316
		45.00							317
		56.25							318
		67.50							319
		78.75							320
		90.00							321
S_{POC}	1.5	0.0	DA	0.0					396
		11.25							397
		22.50							398
		33.75							399
		45.00							400
		56.25							401

TABLE XLIX (Continued)

1	2	3	4	5	6	7	8	9	10
STORE	M_∞	ϕ_s	α_s	β_s	X_T	Y_T	Z_T	TEST NO.	GROUP NO.
S_{POC}	1.5	67.50	DA	0.0	--	--	--	T9A	402
		78.75							403
		90.00							404
		101.25							405
		112.50							406
		123.75							407
		135.00							408
		146.25							409
		157.50							410
		168.75							411
		180.00							412
S_{TOC}		0.0	FA					V6A	432
									433
									471
		10.0							434
		10.0							472
		20.0							435
		20.0							473
		30.0							436
		40.0							437
		50.0							438
		60.0							439
		70.0							440
		80.0							441
		90.0							442
		100.0							443
		110.0							444
		120.0							445
		130.0							446
		140.0							447
		150.0							448
		160.0							449
		170.0							450
		180.0							451
S_E		0.0	GA						317
									368
									386
									391
									402
		10.0							318
		20.0							319
		30.0	HA						320
		40.0	HA						321

TABLE XLIX (Concluded)

1	2	3	4	5	6	7	8	9	10
STORE	M_∞	ϕ_s	α_s	β_s	X_T	Y_T	Z_T	TEST NO.	GROUP NO.
S_E	1.5	50.0	IA	0.0	--	--	--	V6A	322
		60.0	JA						323
		60.0	KA						336
		70.0	JA						324
		80.0	KA						325
		90.0	FA						326
									357
									358
		100.0	KA						327
		110.0							328
		120.0							329
		120.0							337
		130.0	IA						330
		140.0	HA						331
		150.0	HA						332
		160.0	GA						333
		170.0							334
		180.0							335
	2.0	0.0							338
									421
									482
		10.0							339
		20.0							340
		30.0	HA						341
		40.0	HA						342
		50.0	IA						343
		60.0	KA						344
		70.0							345
		80.0							346
		90.0	FA						347
		100.0	KA						348
		110.0							349
		120.0							350
		130.0	IA						351
		140.0	HA						352
		150.0	HA						353
		160.0	GA						354
		170.0							355
		180.0							356

TABLE L

S_{LFN} FORCE AND MOMENT DATA

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
	N_1B_2W		1.5	0.0	0.0	0.0	1	0.0	0.0	AZ	-	B4A	442
							2						443
							3						444
				5.0	5.0		1						448
							2						449
							3						450
			2.0	0.0	0.0		1						431
							2						432
							3						433
				5.0	5.0		1						455
							2						456
							3						457
			2.5	0.0	0.0		1						423
							2						424
							3						425
				5.0	5.0		1						465
							2						464
							3						463
	$N_1B_2W(P_2)_c$		1.5	0.0	0.0		1						435
			1.5	5.0	5.0								445
			2.0	0.0	0.0								426
			2.0	5.0	5.0								452
			2.5	0.0	0.0								417
			2.5	5.0	5.0								461
	$N_1B_2W(P_2)_{1/3}$		1.5	0.0	0.0		2						438
			1.5	5.0	5.0								446
			2.0	0.0	0.0								429
			2.0	5.0	5.0								451
			2.5	0.0	0.0								421
			2.5	5.0	5.0								458

TABLE L (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_1B_2W(P_3)1/3$			2.0	0.0	0.0	0.0	4	0.0	0.0	BZ	-	T9A	389
								-1.5	0.0				390
								-1.5	-0.75				391
								0.0	-0.75				392
					BA				0.0	0.75			393
					0.0	AB				0.75			394
$N_1B_2W(P_2)2/3$			1.5		0.0	0.0	3			AZ		B4A	440
			1.5	5.0	5.0								447
			2.0	0.0	0.0								430
			2.0	5.0	5.0								453
			2.5	0.0	0.0								422
			2.5	5.0	5.0								462
$N_3B_2WA_4(P_2)_C$			1.5	0.0	0.0		1			BZ	0.81	T9A	306
								-1.5					307
								-1.5	-0.75				308
								0.0	-0.75				309
					EA				0.0	0.75			310
					0.0	AB				0.75			311
$N_3B_2WA_4(P_3)1/3$						0.0	4			BZ			298
								-1.5					299
								-1.5	-0.75				300
								0.0	-0.75				301
					BA				0.0	0.75			302
					0.0	BB				0.75			303
				5.0	5.0	0.0				BZ			294
								-1.5					295
								-1.5	-0.75				296
								0.0	-0.75				297

TABLE L (Concluded)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	PARENT CONFIGURATION		M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
	$N_3B_2WA_5$		2.0	0.0	0.0	0.0	1	0.0	0.0	BZ	0.91	T9A	375
								-1.5	0.0				376
								-1.5	-0.75				377
								0.0	-0.75				378
					EA				0.0	0.75			379
					0.0	AB				0.75			380
						0.0	4			BZ			381
								-1.5					382
								-1.5	-0.75				383
								0.0	-0.75				384
					BA				0.0	0.75			385
					0.0	BB				0.75			386
	$N_3B_2WA_5(P_2)_C$					0.0	1			BZ			368
								-1.5					369
								-1.5	-0.75				370
								0.0	-0.75				371
					EA				0.0	0.75			372
					0.0	AB				0.75			373
	$N_3B_2WA_5(P_3)_{1/3}$					0.0	4			BZ			360
								-1.5					361
								-1.5	-0.75				362
								0.0	-0.75				363
					BA				0.0	0.75			364
					0.0	BB				0.75			365
				5.0	5.0	0.0				BZ			356
								-1.5					357
								-1.5	-0.75				358
								0.0	-0.75				359

TABLE LI

S_{LFF} FORCE AND MOMENT DATA

1-3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION	M_∞	α_p	α_s	β_s	CTS ZERO PT.	ΔX_p	ΔY_p	ΔZ_p	ℓ_p	TEST NO.	GROUP NO.
N_1B_2W	1.5	0.0	0.0	0.0	1	0.0	0.0	AZ	-	B4A	474
		0.0	0.0		2						475
		5.0	5.0		2						468
	2.0	0.0	0.0		1			BZ		L5A	98
					2						95
					3						97
		5.0	5.0		1						109
					2						111
					3						108
	2.5	0.0	0.0		1						123
					2						115
					3						122
$N_1B_2W(P_2)_C$	1.5	0.0	0.0		1			AZ		B4A	473
	1.5	5.0	5.0					AZ		B4A	470
	2.0	0.0	0.0					BZ		L5A	103
	2.0	5.0	5.0								106
	2.5	0.0	0.0								116
$N_1B_2W(P_2)_{1/3}$	1.5	0.0	0.0		2			AZ		B4A	472
	1.5	5.0	5.0					AZ		B4A	466
	2.0	0.0	0.0					BZ		L5A	82
											83
											101
						-0.5					84
						-1.0					85
						-1.5					86
						0.0	-0.5				87
						-0.5					88
						-1.0					89
						-1.5					90
						0.0	0.5				91

TABLE LI (Concluded)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_p	α_s	β_s	CTS ZERO PT.	ΔX_p	ΔY_p	ΔZ_p	ℓ_p	TEST NO.	GROUP NO.
$N_1B_2W(P_2)1/3$			2.0	0.0	0.0	0.0	2	-0.5	0.5	BZ	-	L5A	92
								-1.0					93
				5.0	5.0			-1.5					94
			2.5	0.0	0.0			0.0	0.0				110
$N_1B_2W(P_2)2/3$			2.0	0.0	0.0		3						114
			2.0	5.0	5.0								96
			2.5	0.0	0.0								107
													117

TABLE LII

S_{COC} FORCE AND MOMENT DATA

1-3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION	M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
N_1B_2W	1.5	0.0	0.0	0.0	4	0.0	0.0	BZ	-	M9A	1043
						-0.75					1044
						-1.5					1045
						-1.5	-0.75				1046
						-0.75					1047
						0.0					1048
						0.0	0.75				1049
						-0.75					1050
						-1.50					1051
						0.0	0.0	0.75			1052
								0.75			1053
$N_1B_2W(P_2)_c$	1.63				1			CZ			556
						-1.0					557
						-2.0					558
						-3.0					559
						-4.0					560
						-5.0					561
						-5.0	1.0				562
						-4.0					563
						-3.0					564
						-2.0					565
						-1.0					566
						0.0					567
						0.0	2.0				568
						-1.0					569
						-2.0					570
						-3.0					571
						-4.0					572
						-5.0					573

TABLE LII (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_p	α_s	β_s	CTS ZERO PT.	ΔX_p	ΔY_p	ΔZ_p	ℓ_p	TEST NO.	GROUP NO.
$N_1B_2W(P_2)_c$			1.63	0.0	0.0	0.0	1	-5.0	-1.0	CZ	-	M9A	574
								-4.0					575
								-3.0					576
								-2.0					577
								-1.0					578
								0.0					579
								0.0	-2.0				580
								-1.0					581
								-2.0					582
								-3.0					583
								-4.0					584
								-5.0					585
						5.0		-5.0					586
								-4.0					587
								-3.0					588
								-2.0					589
								-1.0					590
								0.0					591
								0.0	-1.0				592
								-1.0					593
								-2.0					594
								-3.0					595
								-4.0					596
								-5.0					597
								-5.0	2.0				598
								-4.0					599
								-3.0					600
								-2.0					601
								-1.0					602
								0.0					603

TABLE LII (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_P	α_S	β_S	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_1B_2W(P_2)_C$			1.63	0.0	0.0	5.0	1	0.0	1.0	CZ	-	M9A	604
								-1.0					605
								-2.0					606
								-3.0					607
								-4.0					608
								-5.0					609
								-5.0	0.0				610
								-4.0					611
								-3.0					612
								-2.0					613
								-1.0					614
								0.0					615
						-5.0		0.0					616
								-1.0					617
								-2.0					618
								-3.0					619
								-4.0					620
								-5.0					621
								-5.0	1.0				622
								-4.0					623
								-3.0					624
								-2.0					625
								-1.0					626
								0.0					627
								0.0	2.0				628
								-1.0					629
								-2.0					630
								-3.0					631
								-4.0					632
								-5.0					633

TABLE LII (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_1B_2W(P_2)_C$			1.63	0.0	0.0	-5.0	1	-5.0	-1.0	CZ	-	M9A	634
								-4.0					635
								-3.0					636
								-2.0					637
								-1.0					638
								0.0					639
								0.0	-2.0				640
								-1.0					641
								-2.0					642
								-3.0					643
								-4.0					644
								-5.0					645
						0.0		0.0	0.0	DZ			646
					-2.5	-2.0			1.0	EZ			767
					-5.0	-2.0				EZ			768
					-2.5	0.0				FZ			769
								-1.0					770
								-2.0					771
								-3.0					772
								-4.0					773
								-5.0					774
								-5.0	-1.0				775
								-4.0					776
								-3.0					777
								-2.0					778
								-1.0					779
								0.0					780
						2.0		0.0					781
								-1.0					782
								-2.0					783

TABLE LII (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_P	α_S	β_S	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ	TEST NO.	GROUP NO.
$N_1B_2W(P_2)_c$			1.63	0.0	-2.5	2.0	1	-3.0	-1.0	FZ	-	M9A	784
								-4.0					785
								-5.0					786
								-5.0	1.0				787
								-4.0					788
								-3.0					789
								-2.0					790
								-1.0					791
								0.0					792
						-2.0		0.0					793
								-1.0					794
								-2.0					795
								-3.0					796
								-4.0					797
								-5.0					798
								-5.0	-1.0				799
								-4.0					800
								-3.0					801
								-2.0					802
								-1.0					803
								0.0					804
					-5.0	0.0		0.0	1.0	GZ			808
								-1.0					809
								-2.0					810
								-3.0					811
								-4.0					812
								-5.0					813
								-5.0	-1.0				814
								-4.0					815
								-3.0					816

TABLE LII (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_1B_2W(P_2)_C$			1.63	0.0	-5.0	0.0	1	-2.0	-1.0	GZ	-	M9A	817
								-1.0					818
								0.0					819
						2.0		0.0					820
								-1.0					821
								-2.0					822
								-3.0					823
								-4.0					824
								-5.0					825
								-5.0	1.0				826
								-4.0					827
								-3.0					828
								-2.0					829
								-1.0					830
								0.0					831
						-2.0		0.0					832
								-1.0					833
								-2.0					834
								-3.0					835
								-4.0					836
								-5.0					837
								-5.0	-1.0				838
								-4.0					839
								-3.0					840
								-2.0					841
								-1.0					842
								0.0					843
					-2.5	0.0		0.0	0.0				844
								-1.0					845
								-2.0					846

TABLE LII (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_1B_2W(P_2)_C$			1.63	0.0	-2.5	0.0	1	-3.0	0.0	GZ	-	M9A	847
								-4.0					848
								-5.0					849
						2.0		-5.0					850
								-4.0					851
								-3.0					852
								-2.0					853
								-1.0					854
								0.0					855
						-2.0		0.0					856
								-1.0					857
								-2.0					858
								-3.0					859
								-4.0					860
								-5.0					861
					-5.0			-5.0					862
								-4.0					863
								-3.0					864
								-2.0					865
								-1.0					866
								0.0					867
						2.0		0.0					868
								-1.0					869
								-2.0					870
								-3.0					871
								-4.0					872
								-5.0					873
						0.0		-5.0					874
								-4.0					875
								-3.0					876

TABLE LII (Continued)

1–3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION	M_∞	α_p	α_s	β_s	CTS ZERO PT.	ΔX_p	ΔY_p	ΔZ_p	ℓ_p	TEST NO.	GROUP NO.
$N_1B_2W(P_2)_c$	1.63	0.0	-5.0	0.0	1	-2.0	0.0	GZ	-	M9A	877
						-1.0					878
						0.0					879
$N_1B_2W(P_3)_{1/3}$	1.5		0.0		4	0.0		BZ			1032
						-0.75					1033
						-1.5					1034
						-1.5	-0.75				1035
						-0.75					1036
						0.0					1037
						0.0	0.75				1038
						-0.75					1039
						-1.5					1040
			BA			0.0	0.0	0.75			1041
			0.0	EB				0.75			1042
		5.0	5.0	0.0				BZ		T9A	458
						-1.5					459
						-1.5	-0.75				460
						0.0	-0.75				461
	1.63	0.0	0.0			0.0	0.0	HZ		M9A	652
						-1.0					653
						-2.0					654
						-3.0					655
						-4.0					656
						-5.0		IZ			657
						-5.0	1.0				658
						-4.0					659
						-3.0		DZ			660
						-2.0		HZ			661
						-1.0					662
						0.0					663

TABLE LII (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP. NO.
$N_1B_2W(P_3)_{1/3}$			1.63	0.0	0.0	0.0	4	0.0	2.0	HZ	-	M9A	664
								-1.0		HZ			665
								-2.0		JZ			666
								-2.0		KZ			667
								-3.0		LZ			668
								-4.0					669
								-5.0					670
								-5.0	-1.0				671
								-4.0					672
								-3.0					673
								-2.0					674
								-1.0					675
								0.0					676
								0.0	-2.0				677
								-1.0					678
								-2.0					679
								-3.0					680
								-4.0					681
								-5.0					682
						5.0		0.0	0.0	HZ			683
								-1.0					684
								-2.0					685
								-3.0					686
								-4.0					687
								-5.0					688
						-5.0		-5.0					689
								-4.0					690
								-3.0					691
								-2.0					692
								-1.0					693

TABLE LII (Continued)

1-3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION	M_∞	α_p	α_s	β_s	CTS ZERO PT.	ΔX_p	ΔY_p	ΔZ_p	ℓ_p	TEST NO.	GROUP NO.
$N_1B_2W(P_3)_{1/3}$	1.63	0.0	0.0	-5.0	4	0.0	0.0	HZ	-	M9A	694
				5.0		0.0	-1.0				695
						-1.0					696
						-2.0					697
						-3.0					698
						-4.0					699
						-5.0					700
						-5.0	-2.0				701
						-4.0					702
						-3.0					703
						-2.0					704
						-1.0					705
						0.0					706
				-5.0		0.0					707
						-1.0					708
						-2.0					709
						-3.0					710
						-4.0					711
						-5.0					712
						-5.0	-1.0				713
						-4.0					714
						-3.0					715
						-2.0					716
						-1.0					717
						0.0					718
				5.0		0.0	1.0	MZ			719
						-1.0					720
						-2.0					721
						-3.0					722
						-4.0					723

TABLE LII (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_p	α_s	β_s	CTS ZERO PT.	ΔX_p	ΔY_p	ΔZ_p	ℓ_p	TEST NO.	GROUP NO.
	$N_1B_2W(P_3)$	1/3	1.63	0.0	0.0	5.0	4	-5.0	1.0	MZ	-	M9A	724
								-5.0	2.0				725
								-4.0					726
								-3.0					727
								-2.0					728
								-1.0					729
								0.0					730
						-5.0		0.0					731
								-1.0					732
								-2.0					733
								-3.0					734
								-4.0					735
								-5.0					736
								-5.0	1.0				737
								-4.0					738
								-3.0					739
								-2.0					740
								-1.0					741
								0.0					742
						0.0		-2.0	2.0	HZ			882
					-7.5			0.0	0.0	LZ			920
								-1.0					921
								-2.0					922
								-3.0					923
								-4.0					924
								-5.0					925
								-5.0	1.0				926
								-4.0					927
								-3.0					928
								-2.0					929

TABLE LII (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_1B_2W(P_3)_{1/3}$			1.63	0.0	-7.5	0.0	4	-1.0	1.0	LZ	-	M9A	930
								0.0	1.0				931
								0.0	-1.0				932
								-1.0					933
								-2.0					934
								-3.0					935
								-4.0					936
								-5.0					937
						-2.0		-5.0					938
								-4.0					939
								-3.0					940
								-2.0					941
								-1.0					942
								0.0					943
								0.0	1.0				944
								-1.0					945
								-2.0					946
								-3.0					947
								-4.0					948
								-5.0					949
								-5.0	0.0				950
								-4.0					951
								-3.0					952
								-2.0					953
								-1.0					954
								0.0					955
						2.0		0.0					956
								-1.0					957
								-2.0					958
								-3.0					959

TABLE LII (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_1B_2W(P_3)$	1/3		1.63	0.0	-7.5	2.0	4	-4.0	0.0	LZ	-	M9A	960
								-5.0	0.0				961
								-5.0	1.0				962
								-4.0					963
								-3.0					964
								-2.0					965
								-1.0					966
								0.0					967
								0.0	-1.0				968
								-1.0					969
								-2.0					970
								-3.0					971
								-4.0					972
								-5.0					973
					-15.0	0.0		0.0	0.0	NZ			974
								-1.0					975
								-2.0					976
								-3.0					977
								-4.0					978
								-5.0					979
								-5.0	1.0				980
								-4.0					981
								-3.0					982
								-2.0					983
								-1.0					984
								0.0					985
								0.0	-1.0				986
								-1.0					987
								-2.0					988
								-3.0					989

TABLE LII (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_1B_2W(P_3)_{1/3}$			1.63	0.0	-15.0	0.0	4	-4.0	-1.0	NZ	-	M9A	990
						0.0		-5.0					991
						-2.0		-5.0					992
								-4.0					993
								-3.0					994
								-2.0					995
								-1.0					996
								0.0					997
								0.0	1.0				998
								-1.0					999
								-2.0					1000
								-3.0					1001
								-4.0					1002
								-5.0					1003
								-5.0	0.0				1004
								-4.0					1005
								-3.0					1006
								-2.0					1007
								-1.0					1008
								0.0					1009
						2.0		0.0					1010
								-1.0					1011
								-2.0					1012
								-3.0					1013
								-4.0					1014
								-5.0					1015
								-5.0	1.0				1016
								-4.0					1017
								-3.0					1018
								-2.0					1019

TABLE LII (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_1B_2W(P_3)_{1/3}$			1.63	0.0	-15.0	2.0	4	-1.0	1.0	NZ	-	M9A	1020
								0.0	1.0				1021
								0.0	-1.0				1022
								-1.0					1023
								-2.0					1024
								-3.0					1025
								-4.0					1026
								-5.0					1027
$N_3B_2WA_4(P_2)_C$			1.5		0.0	0.0	1	0.0	0.0	BZ	0.81	T9A	466
								-1.5	0.0				467
								-1.5	-0.75				468
								0.0	-0.75				469
					EA				0.0	0.75			470
					0.0	AB				0.75			471
				5.0	5.0	0.0				BZ			284
								-1.5					285
								-1.5	-0.75				286
								0.0	-0.75				287
$N_3B_2WA_4(P_3)_{1/3}$				0.0	0.0		4	0.0	0.0				271
								-1.5	0.0				272
								-1.5	-0.75				273
								0.0	-0.75				274
					BA				0.0	0.75			275
					0.0	BB				0.75			276
				5.0	5.0	0.0				BZ			277
								-1.5					278
								-1.5	-0.75				279
								0.0	-0.75				280

TABLE LII (Concluded)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION			M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_3B_2WA_5(P_2)_C$			2.0	0.0	0.0	0.0	1	0.0	0.0	BZ	0.81	T9A	322
								-1.5	0.0				323
								-1.5	-0.75				324
								0.0	-0.75				325
					EA				0.0	0.75			326
					0.0	AB				0.75			327
				5.0	5.0	0.0				BZ			345
								-1.5					346
								-1.5	-0.75				347
								0.0	-0.75				348
$N_3B_2WA_5(P_3)_{1/3}$				0.0	0.0		4	0.0	0.0				332
								-1.5	0.0				333
								-1.5	-0.75				334
								0.0	-0.75				335
					BA				0.0	0.75			336
					0.0	BB				0.75			337
				5.0	5.0	0.0				BZ			338
								-1.5					339
								-1.5	-0.75				340
								0.0	-0.75				341

TABLE LIII

S_{POC} FORCE AND MOMENT DATA

1–3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION	M_∞	α_P	α_S	β_S	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_1B_2W(P_3)_{1/3}$	1.5	0.0	0.0	0.0	4	0.0	0.0	BZ	--	T9A	439
						-1.5	0.0				440
						-1.5	-0.75				441
						0.0	-0.75				442
			AA				0.0	0.75			443
			0.0	AB				0.75			444
		5.0	5.0	0.0				BZ			454
						-1.5					455
						-1.5	-0.75				456
						0.0	-0.75				457
$N_3B_2WA_4(P_2)_c$		0.0	0.0		1	0.0	0.0		0.81		433
						-1.5	0.0				434
						-1.5	-0.75				435
						0.0	-0.75				436
			EA				0.0	0.75			437
			0.0	AB				0.75			438
		5.0	5.0	0.0				BZ			413
						-1.5					414
						-1.5	-0.75				415
						0.0	-0.75				416
$N_3B_2WA_4(P_3)_{1/3}$		0.0	0.0		4	0.0	0.0				424
						-1.5	0.0				425
						-1.5	-0.75				426
						0.0	-0.75				427
			BA				0.0	0.75			428
			0.0	BB				0.75			429
		5.0	5.0	0.0				BZ			420
						-1.5					421
						-1.5	-0.75				422
						0.0	-0.75				423

TABLE LIV

S_{TOC} FORCE AND MOMENT DATA

1–3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION	M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_3B_2WA_4(P_2)_C$	1.5	0.0	0.0	0.0	1	0.0	0.0	BZ	0.81	V6A	452
						-1.5	0.0				453
						-1.5	-0.75				454
						0.0	-0.75				455
			EA				0.0	0.75			456
			0.0	AB				0.75			457
		5.0	5.0	0.0				BZ			475
						-1.5					476
						-1.5	-0.75				477
						0.0	-0.75				478
$N_3B_2WA_4(P_3)_{1/3}$		0.0	0.0		4	0.0	0.0				460
						-1.5	0.0				461
						-1.5	-0.75				462
						0.0	-0.75				463
			BA				0.0	0.75			464
			0.0	CB				0.75			465
		5.0	5.0	0.0				BZ			466
						-1.5					467
						-1.5	-0.75				468
						0.0	-0.75				469

TABLE LV

S_E FORCE AND MOMENT DATA

1–3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION	M_∞	α_P	α_S	β_S	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_1B_2W(P_2)_C$	1.5	0.0	0.0	0.0	1	0.0	0.0	BZ	--	V6A	419
		0.0	0.0			-2.26					420
		5.0	5.0			0.0					410
		5.0	5.0			-2.26					411
$N_1B_2W(P_2)_{1/3}$		0.0	0.0		2	0.0					415
		0.0	0.0			-1.0					416
		5.0	5.0			0.0					412
		5.0	5.0			-1.0					413
$N_3B_2WA_3$		0.0	0.0		5	0.0					397
						-1.0					398
						-2.0					399
					1	0.0					400
						-2.66					401
		5.0	5.0			0.0					406
		5.0	5.0			-2.66					407
$N_3B_2WA_3(P_2)_C$		0.0	0.0			0.0					389
		0.0	0.0			-2.66					390
		5.0	5.0			0.0					403
		5.0	5.0			-2.66					404
	2.0	0.0	0.0			0.0					485
		0.0	0.0			-2.66					486
		5.0	5.0			0.0					490
		5.0	5.0			-2.66					491
$N_3B_2WA_3P$	1.5	0.0	0.0		5	0.0					392
						-1.0					393
						-2.0					394
$N_3B_2WA_4$					1	0.0			0.81		374
						-2.66					375
						-2.66	-1.75				376
						0.0	-1.75				377

TABLE LV (Concluded)

1–3	4	5	6	7	8	9	10	11	12	13	14
PARENT CONFIGURATION	M_∞	α_P	α_s	β_s	CTS ZERO PT.	ΔX_P	ΔY_P	ΔZ_P	ℓ_P	TEST NO.	GROUP NO.
$N_3B_2WA_4$	1.5	5.0	5.0	0.0	1	0.0	0.0	BZ	0.81	V6A	364
						-2.66	0.0				365
						-2.66	-1.75				366
						0.0	-1.75				367
		0.0	0.0		5	0.0	0.0				378
						-1.0					379
						-2.0					380
$N_3B_2WA_4(P_2)_C$					1	0.0					369
						-2.66					370
						-2.66	-1.75				371
						0.0	-1.75				372
		5.0	5.0			0.0	0.0				359
						-2.66	0.0				360
						-2.66	-1.75				361
						0.0	-1.75				362
$N_3B_2WA_4F$		0.0	0.0		5	0.0	0.0				383
						-1.0					384
						-2.0					385
$N_3B_2WA_5(P_2)_C$	2.0				1	0.0					428
						-2.66					429
						-2.66	-1.75				430
						0.0	-1.75				431
		5.0	5.0			0.0	0.0				422
						-2.66	0.0				423
						-2.66	-1.75				424
						0.0	-1.75				425
$N_3B_2WA_5F$		0.0	0.0		5	0.0	0.0				479
						-1.0					480
						-2.0					481

TABLE LVI

TABLE OF CTS ZERO POINTS FOR FORCE AND MOMENT TESTS

ZERO POINT NUMBER	INITIAL STORE LOCATION	X_P, Y_P, Z_P COORDINATES OF STORE MOMENT REFERENCE POINT WHEN $\Delta X_P = \Delta Y_P = \Delta Z_P = 0$
1	Below Double-Wedge Pylon on Fuselage Centerline	All Stores Except S_E $X_P = -19.42$, $Y_P = 0.0$, $Z_P = 2.82$ Store S_E $X_P = -18.34$, $Y_P = 0.0$, $Z_P = 2.82$
2	Below Double-Wedge Pylon at Wing 1/3 Semispan	All Stores Except S_E $X_P = -20.84$, $Y_P = -4.0$, $Z_P = 1.37$ Store S_E $X_P = -19.76$, $Y_P = -4.0$, $Z_P = 1.37$
3	Below Double-Wedge Pylon at Wing 2/3 Semispan	All Stores Except S_E $X_P = -24.52$, $Y_P = -8.0$, $Z_P = 1.30$
4	Below Swept Pylon At Wing 1/3 Semispan	All Stores Except S_E $X_P = -20.84$, $Y_P = -4.0$, $Z_P = 1.37$
5	Fuselage Centerline Station Behind Fairing	Store S_E $X_P = -22.0$, $Y_P = 0.0$, $Z_P = 2.43$

TABLE LVII

VALUES OF ΔZ_p USED IN VARIOUS SWEEPS

1	2	3	4	5	6	7	8	9	10	11	12	13	14
AZ	BZ	CZ	DZ	EZ	FZ	GZ	HZ	IZ	JZ	KZ	LZ	MZ	NZ
0.10	0.10	0.05	0.10	0.10	0.05	0.25	0.05	0.05	0.10	0.25	0.25	0.75	0.50
0.25	0.25	0.10	0.25	0.25	0.10	0.50	0.10	0.10	0.25	0.50	0.50	1.00	0.75
0.50	0.50	0.25	0.50	0.50	0.25	0.75	0.25	0.25	0.50	0.75	0.75	1.25	1.00
0.75	0.75	0.50	0.75	0.75	0.50	1.00	0.50	0.50	0.75	1.00	1.00	1.50	1.25
1.00	1.00	0.75	1.00	1.00	0.75	1.25	0.75	0.75			1.25	2.0	1.50
1.25	1.25	1.00	1.25	1.25	1.00	1.50	1.00	1.00			1.50	2.5	2.0
1.50	1.50	1.25	1.50	1.50	1.25	2.0	1.25	1.25			2.0	3.0	2.5
1.75	1.75	1.50	2.0	2.0	1.50	2.5	1.50	1.50			2.5	3.5	3.0
2.00	2.00	2.0	2.5	2.5	2.0	3.0	2.0	2.0			3.0	4.0	3.5
2.25	2.25	2.5	3.0	3.0	2.5	3.5	2.5	2.5			3.5	4.5	4.0
2.50	2.50	3.0	3.5	3.5	3.0	4.0	3.0	3.0			4.0	5.0	4.5
2.75	2.75	3.5	4.0	4.0	3.5	4.5	3.5	3.5			4.5	6.0	5.0
3.00	3.00	4.0	4.5	4.5	4.0	5.0	4.0	4.0			5.0	7.0	6.0
3.25	3.25	4.5	5.0	5.0	4.5		4.5	4.5			6.0	8.0	7.0
3.50	3.50	5.0	6.0		5.0		5.0	5.0			7.0	9.0	8.0
3.75	3.75	6.0	7.0				6.0	6.0			8.0		9.0
4.00	4.00	7.0					7.0	7.0					
4.25	4.25						8.0	8.0					
4.50	4.50							9.0					
	4.75												
	5.00												
	5.25												
	5.50												
	5.75												
	6.00												

TABLE LVIII

VALUES OF α_s USED IN VARIOUS SWEEPS

1	2	3	4	5	6	7	8	9	10	11	12	13	14
AA	BA	CA	DA	EA	FA	GA	HA	IA	JA	KA	LA	MA	NA
7.5	10.0	-22.0	30.0	-5.0	-18.0	-12.0	-14.0	-18.0	-22.0	-18.0	-15.0	-26.0	-30.0
5.0	7.5	-18.0	26.0	-2.5	-14.0	-10.0	-12.0	-16.0	-20.0	-16.0	-12.5	-22.0	-26.0
2.5	5.0	-14.0	22.0	0.0	-12.0	-8.0	-10.0	-14.0	-18.0	-14.0	-10.0	-18.0	-22.0
0.0	2.5	-12.0	18.0	2.5	-10.0	-6.0	-8.0	-12.0	-16.0	-12.0	-7.5	-14.0	-18.0
-2.5	0.0	-10.0	14.0	5.0	-8.0	-4.0	-6.0	-10.0	-14.0	-10.0	-5.0	-12.0	-14.0
-5.0	-2.5	-8.0	12.0	7.5	-6.0	-2.0	-4.0	-8.0	-12.0	-8.0	-3.0	-10.0	-12.0
-7.5	-5.0	-6.0	10.0	10.0	-4.0	0.0	-2.0	-6.0	-10.0	-6.0	-2.0	-8.0	-10.0
-10.0	-7.5	-4.0	8.0		-2.0	2.0	0.0	-4.0	-8.0	-4.0	-1.0	-6.0	-8.0
	-10.0	-2.0	6.0		0.0	4.0	2.0	-2.0	-6.0	-2.0	0.0	-4.0	-6.0
		0.0	4.0		2.0	6.0	4.0	0.0	-4.0	0.0	1.0	-2.0	-4.0
		2.0	2.0		4.0	8.0	6.0	2.0	-2.0	2.0	2.0	0.0	-2.0
		4.0	0.0		6.0	10.0	8.0	4.0	0.0	4.0	3.0	2.0	0.0
		6.0	-2.0		8.0	12.0	10.0	6.0	2.0	6.0	5.0	4.0	2.0
		8.0	-4.0		10.0		12.0	8.0	4.0	8.0	7.5	6.0	4.0
		10.0	-6.0		12.0		14.0	10.0	6.0	10.0	10.0	8.0	6.0
		12.0	-8.0		14.0			12.0	8.0	12.0	12.5	10.0	8.0
		14.0	-10.0		18.0			14.0	10.0	14.0	15.0	12.0	10.0
		18.0	-12.0		22.0			16.0	12.0	16.0		14.0	12.0
		22.0	-14.0		26.0			18.0	14.0	18.0		18.0	14.0
		26.0	-18.0						16.0	20.0		22.0	18.0
			-22.0						18.0	22.0		26.0	22.0
			-26.0										26.0
			-30.0										

TABLE LIX

VALUES OF β_s USED IN VARIOUS SWEEPS

AB	BB	CB	DB	EB	FB	GB
-10.0	10.0	-2.5	-1.0	-10.0	-7.5	-7.5
- 7.5	7.5	0.0	0.0	- 7.5	-5.0	-5.0
- 5.0	5.0	2.5	1.0	- 5.0	-3.0	-3.0
- 2.5	2.5	5.0	2.0	- 2.5	-2.0	-2.0
0.0	0.0		3.0	0.0	-1.0	-1.0
2.5	-2.5		4.0	2.5	0.0	0.0
5.0			5.0	5.0	1.0	1.0
7.5			7.5	7.5	2.0	2.0
10.0					3.0	3.0
					5.0	5.0
					7.5	7.5
						10.0

TABLE LX

VALUES OF Z_T USED IN FREE-STREAM SWEEPS

AZT
3.0
1.5
0.0
-1.5
-3.0
-4.5
-6.0
-7.5

TABLE LXI

SUMMARY OF TRAJECTORY TESTS

STORE TESTED	TEST CONDITIONS TABLE NUMBER
S_{LFN}	LXII
S_{COC}	LXIII
S_{POC}	LXIV
S_{TOC}	LXV
S_E	LXVI

TABLE LXII

S_{LFN} TRAJECTORY DATA

1–3	4	5	6	7	8	9	10	11	12	13
PARENT CONFIGURATION	M_∞	α_P	TYPE START	X_{L_1}	EJECTOR FORCE	CTS ROLL	CTS ZERO POINT	TRAJ. CODE	TEST NO.	GROUP NO.
$N_1B_2W(P_3)_{1/3}$	2.0	0.0	L	-1.5	A	NO	3	6	T9A	395
$N_3B_2WA_4(P_2)_c$	1.5	0.0	L	0.0	A	YES	1	6	T9A	305
	1.5	5.0	L	0.0	A	YES	1	6	T9A	292
$N_3B_2WA_4(P_3)_{1/3}$	1.5	0.0	L	-1.5	A	YES	3	6	T9A	304
	1.5	5.0	L	-1.5	A	YES	3	6	T9A	293
$N_3B_2WA_5(P_2)_c$	2.0	0.0	L	0.0	A	NO	1	6	T9A	367
$N_3B_2WA_5(P_3)_{1/3}$	2.0	0.0	L	-1.5	A	NO	3	6	T9A	366
	2.0	5.0	L	-1.5	A	NO	3	6	T9A	355

TABLE LXIII

S_{COC} TRAJECTORY DATA

1-3	4	5	6	7	8	9	10	11	12	13
PARENT CONFIGURATION	M_∞	α_P	TYPE START	X_{L_1}	EJECTOR FORCE	CTS ROLL	CTS ZERO POINT	TRAJ. CODE	TEST NO.	GROUP NO.
NONE	1.63	-	L	-0.5	A	NO	6	5	V6A	316
$N_1B_2W(P_3)_{1/3}$	1.5	5.0	L	-1.5	A	NO	3	6	T9A	462
$N_3B_2WA_4(P_2)_c$	1.5	0.0	L	0.0	A	YES	1	6	T9A	463
	1.5	5.0	L	0.0		YES	1	6	T9A	472
$N_3B_2WA_4(P_3)_{1/3}$	1.5	0.0	L	-1.5	A	YES	3	6	T9A	464
	1.5	0.0	PL	-	-	YES	3	6	T9A	465
	1.5	5.0	L	-1.5	A	YES	3	6	T9A	281
	1.5	5.0	PL	-	-	YES	3	6	T9A	282
$N_3B_2WA_5(P_2)_c$	2.0	0.0	L	0.0	A	NO	1	6	T9A	329
	2.0	5.0	L	0.0	A	NO	1	6	T9A	344
$N_3B_2WA_5(P_3)_{1/3}$	2.0	0.0	L	-1.5	A	NO	3	6	T9A	330
	2.0	0.0	PL	-	-	NO	3	6	T9A	331
	2.0	5.0	L	-1.5	A	NO	3	6	T9A	342
	2.0	5.0	PL	-	-	NO	3	6	T9A	343

TABLE LXIV

S_{POC} TRAJECTORY DATA

1-3	4	5	6	7	8	9	10	11	12	13
PARENT CONFIGURATION	M_∞	α_P	TYPE START	X_{L_1}	EJECTOR FORCE	CTS ROLL	CTS ZERO POINT	TRAJ. CODE	TEST NO.	GROUP NO.
$N_1B_2W(P_3)_{1/3}$	1.5	0.0	L	-1.5	A	NO	3	6	T9A	445
	1.5	5.0	L	-1.5	A	NO	3	6	T9A	453
$N_1B_2W(P_3)_{1/3}T$ S_{DOC2} S_{DOC3}	1.5	0.0	PL	-	-	NO	4	6	T9A	449
	1.5	0.0	PL	-	-	NO	4	6	T9A	450
	1.5	5.0	L	-4.5	B	NO	4	6	T9A	452
$N_3B_2WA_4(P_2)_c$	1.5	0.0	L	0.0	A	NO	1	6	T9A	432
	1.5	5.0	L	0.0	A	NO	1	6	T9A	418
$N_3B_2WA_4(P_3)_{1/3}$	1.5	0.0	L	-1.5	A	NO	3	6	T9A	431
	1.5	5.0	L	-1.5	A	NO	3	6	T9A	419

TABLE LXV

S_{TOC} TRAJECTORY DATA

1-3	4	5	6	7	8	9	10	11	12	13
PARENT CONFIGURATION	M_∞	α_P	TYPE START	X_{L_1}	EJECTOR FORCE	CTS ROLL	CTS ZERO POINT	TRAJ. CODE	TEST NO.	GROUP NO.
$N_3B_2WA_4(P_2)_c$	1.5	0.0	L	0.0	A	NO	1	3	V6A	458
	1.5	5.0	L	0.0	A	NO	1	3	V6A	474
$N_3B_2WA_4(P_3)_{1/3}$	1.5	0.0	L	-1.5	A	YES	3	4	V6A	459
	1.5	5.0	L	-1.5	A	YES	3	4	V6A	470

TABLE LXVI

S_E TRAJECTORY DATA

1	2	3	4	5	6	7	8	9	10	11	12	13
PARENT CONFIGURATION			M_∞	α_P	TYPE START	X_{L_1}	EJECTOR FORCE	CTS ROLL	CTS ZERO POINT	TRAJ. CODE	TEST NO.	GROUP NO.
NONE			1.5	-	L	-0.5	A	NO	6	5	V6A	387
			1.5	-	L	-0.5	A	NO	5	5	V6A	408
$N_1B_2W(P_2)_C$			1.5	0.0	L	-1.0	A	NO	1	1	V6A	418
			1.5	5.0	L	-1.0	A	NO	1	1	V6A	409
$N_1B_2W(P_2)_{1/3}$			1.5	0.0	L	-1.0	A	NO	2	7	V6A	417
			1.5	5.0	L	-1.0	A	NO	2	7	V6A	414
$N_3B_2WA_3(P_2)_C$			1.5	0.0	L	-1.0	A	NO	1	1	V6A	388
			1.5	5.0	L	-1.0	A	NO	1	1	V6A	405
			2.0	0.0	L	-1.0	A	NO	1	2	V6A	484
			2.0	5.0	L	-1.0	A	NO	1	2	V6A	489
$N_3B_2WA_3F$			1.5	0.0	L	1.0	A	NO	5	10	V6A	395
			1.5	0.0	L	1.0	A	NO	5	10	V6A	396
$N_3B_2WA_4$			1.5	0.0	L	-1.0	A	NO	5	1	V6A	381
$N_3B_2WA_4(P_2)_C$			1.5	0.0	L	-1.0	A	NO	1	1	V6A	373
			1.5	5.0	L	-1.0	A	NO	1	1	V6A	363
$N_3B_2WA_4F$			1.5	0.0	L	0.0	A	NO	5	9	V6A	382
$N_3B_2WA_5(P_2)_C$			2.0	0.0	L	-1.0	A	NO	1	2	V6A	487
			2.0	5.0	L	-1.0	A	NO	1	2	V6A	488

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DATA REPORT FOR AN EXTENSIVE STORE SEPARATION TEST PROGRAM COND--ETC(U)
DEC 79 F K GOODWIN, C L DYER F33615-76-C-3077
UNCLASSIFIED NEAR-TR-205 AFFDL-TR-79-3130 NL

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083848

TABLE LXVII

TABLE OF CTS ZERO POINTS FOR TRAJECTORY TESTS

ZERO POINT NUMBER	INITIAL STORE LOCATION	X_P, Y_P, Z_P COORDINATES* OF STORE MOMENT REFERENCE POINT WHEN IN INITIAL POSITION
1	Below Double-Wedge Pylon on Fuselage Centerline	All Stores Except S_E $X_P = -19.42$, $Y_P = 0.0$, $Z_P = 2.87$ Store S_E $X_P = -18.34$, $Y_P = 0.0$, $Z_P = 2.87$
2	Below Double-Wedge Pylon at Wing 1/3 Semispan	Store S_E $X_P = -19.76$, $Y_P = -4.0$, $Z_P = 1.42$
3	Below Swept Pylon at Wing 1/3 Semispan	All Stores Except S_E $X_P = -20.84$, $Y_P = -4.0$, $Z_P = 1.42$
4	Below TER at Wing 1/3 Semispan	All Stores Except S_E $X_P = -20.84$, $Y_P = -4.0$, $Z_P = 2.13$
5	Fuselage Centerline Station Behind Fairing	Store S_E $X_P = -22.0$, $Y_P = 0.0$, $Z_P = 2.48$
6	Store Moment Reference Point at $X_T = 17.0$, $Y_T = 0.0$, $Z_T = -3.0$	——

*inches model scale

TABLE LXVIII

TRAJECTORY CODES

TRAJ. CODE	m SLUGS	I_{xx} SLUG-FT^2	I_{yy} SLUG-FT^2	I_{zz} SLUG-FT^2
1	20	20	250	250
2				
3	40		700	700
4				
5			70	70,000
6			700	700
7	20		250	250
8				
9				
10				

FOR ALL TRAJECTORY CODES

$I_{xz} = I_{yz} = I_{xy} = 0.0$

APPENDIX A
FLOW-FIELD CALIBRATION DATA

The flow-field calibration data obtained during the B4A, L5A, T9A, and V6A tunnel entries are presented in this appendix for completeness. AEDC was unable to provide a magnetic tape of the M9A data. The following sections will summarize the tests, describe the use of the data retrieval program, and describe the tabulated output.

A.1 SUMMARY OF TESTS

The following table lists by tunnel entry the Mach numbers at which flow-field calibration data were obtained and the group numbers containing the data. The data in each group were obtained by making a pitch angle, α, sweep at constant yaw angle, ψ, or by making a ψ sweep at constant α. The positive senses of these angles are shown in Figure A-1. The X_p, Y_p, Z_p coordinate system is shown in Figure 18.

CALIBRATION DATA

Entry	Mach No.	Group Numbers
B4A	1.5	103-124
	1.75	81-102
	2.0	59-80
	2.5	1-22
L5A	1.5	1-5
	2.0	49-53
T9A	1.5	4-9,23,24,46,47,62, 63,135,136
	2.0	74-76,81,82,99-102, 119,120,127,128
V6A	1.5	2,3,27,28,50,51,98 114-116,136-139
	2.0	195-198,219-221,242 270-273

A.2 FLOW-FIELD CALIBRATION DATA RETRIEVAL

All of the flow-field calibration data listed in the preceding table have been collected and stored on a magnetic tape. The data from all four entries have been written on the tape in a standardized format so a single computer program could be written for data retrieval. The reference pressure which is output on the third line of each page was not recorded on the first two entries (B4A and L5A) so its value has been arbitrarily set to zero for those entries.

A.2.1 Use of the Computer Program

A listing of the computer program used to retrieve the flow-field calibration data is presented at the end of this appendix. The input to the program consists of two cards both read under 16I5 format. The first card contains the number of groups of data to be retrieved. Enter this number in the first field of 5 characters. The number of groups of data to be retrieved is limited to less than 17 solely because of the dimensioning of F in the retrieval program. The second value on the first card is an integer designating which entry the data is to be retrieved for (1 = B4A, 2 = L5A, 4 = T9A, 5 = V6A). The second card contains the group numbers of the data to be retrieved. This information is obtained from the table in Section A.1.

The tape upon which the data is written is a multi-file tape. The first file contains data from B4A. The second file contains data from L5A. The third file contains data from T9A, and the fourth file has the data from V6A. In order to get the proper data the tape must be positioned at the beginning of the file that contains the data for the entry of interest; e.g., to retrieve data for V6A the first three files must be skipped and the tape positioned at the beginning of the fourth file.

A.2.2 Description of the Tabulated Output

Each group of data is presented on four pages of output. Sample output is presented at the end of this appendix following the program listing. The first four lines of output for each group are repeated on all four pages. The first line tells the type of data, the entry number, the time period of the entry, and the AEDC document that pertains to the data being retrieved. The second line gives the group number and page number. The third line shows the tunnel operating conditions. The fourth line shows the location of the probe in the tunnel.

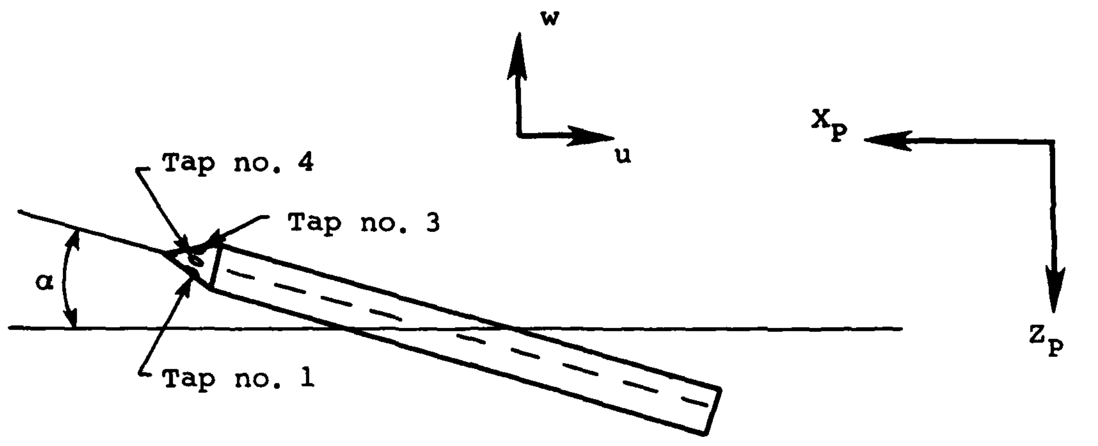
The first three pages of output present data for each of the three probes with page 3 also containing some summary information. The primary summary information is tabulated on page 4. The nomenclature used in the tabulated output is presented in the following table. The methods used in calculating these quantities are given in Section B.1 of Appendix B.

ALPHA	Mechanical angle of attack of the probe rake (Fig. A-1), deg
ALPn n=1,2,3	Corrected Mechanical angle of attack of the n^{th} probe, ALPHA-(TANG) pitch, deg
ALPTn n=1,2,3	Total angle of attack of the n^{th} probe computed using ALP or YAW, deg
DP13/PBn n=1,2,3	Pressure differential in pitch plane (Fig. A-1) of the n^{th} probe normalized by average cone surface pressure
DP24/PBn n=1,2,3	Pressure differential in yaw plane (Fig. A-1) of the n^{th} probe normalized by average cone surface pressure
DPSQn n=1,2,3	Square root of $[(DP13/PB)^2 + (DP24/PB^2)]$

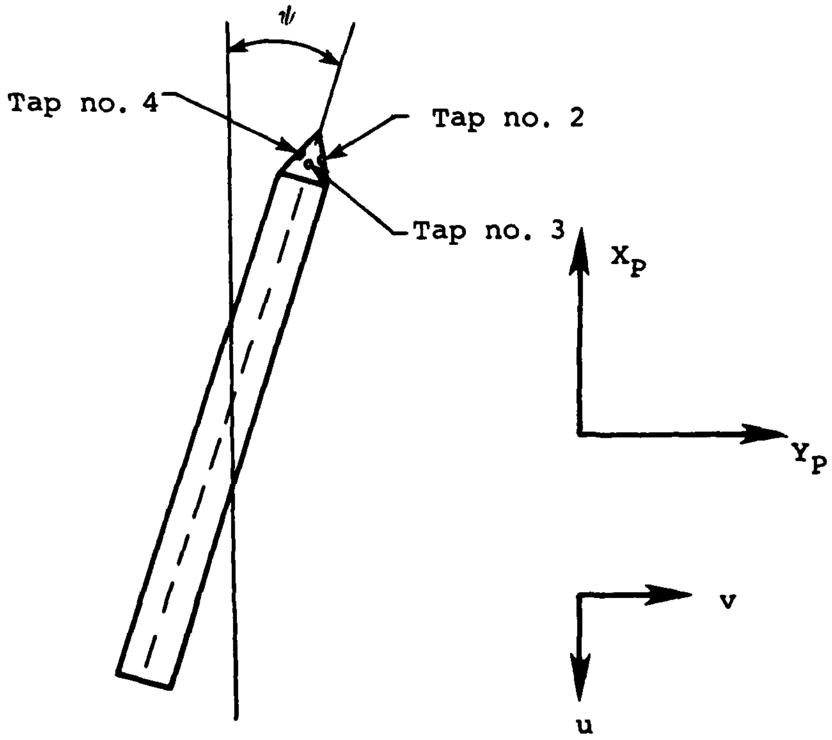
DVn/V8 n=1,2,3	Normalized incremental change in local velocity of the n^{th} probe relative to free-stream velocity
DV/V8 (AVG)	Average value of DVn/V8 over the angle of attack (yaw) range of each probe
DX	Distance from tunnel station zero of probe 1 tip, positive upstream along tunnel centerline, in.
DY	Distance right of tunnel centerline of probe 1 tip, looking upstream, in.
DZ	Distance down from tunnel centerline of probe tip 1, (DX, DY, and DZ form right hand coordinate system), in.
ETA/PBDn n=1,2,3	Slope of DPSQ per degree in total angle of attack, deg^{-1}
GROUP	Data group number
MACH	Free-stream Mach number
MLn n=1,2,3	Local Mach number based on PBn and cone pitot pressure of the n^{th} probe
ML (AVG)	Average local Mach number over the angle of attack (yaw) range of each probe
Pnm/P8 n=1,2,3;m=1-5	Cone probe pressure normalized by free-stream static pressure (n = probe number, m = tap number)

PBn/P8 n=1,2,3	Average cone surface pressure of the n^{th} probe normalized by free-stream static pressure
PB (AVG)/P8	Average cone surface pressure of the n^{th} probe normalized by free-stream static pressure, averaged over the angle of attack (yaw) range of each probe
PHIDn n=1,2,3	Roll angle of the n^{th} probe as sensed by the differential pressures in the pitch and yaw plane (i.e., on DP13/PBn and DP24/PBn), deg
PHITn n=1,2,3	Roll angle of the n^{th} probe based on ALPn and YAWn, deg
PO, PSIA	Stagnation pressure, psia
PREF, PSIA	Reference pressure for probe pressures, psia
PROBE NO.	Probe identification number; probe one is nearest the parent model (see Figure 17)
P8, PSIA	Free-stream static pressure, psia
Q8, PSIA	Free-stream dynamic pressure, psia
RE/FT*10**6	Free-stream Reynolds number x 10^{-6} per ft, ft^{-1}
TANGm m=1,2,3	Angle of pitch and/or yaw which produces a zero pressure differential (DP13 or DP24) for each probe, deg

TO, DEG	Free-stream stagnation temperature, ^{o}R
T8, DEG (R)	Free-stream static temperature, ^{o}R
V8, FT/SEC	Free-stream velocity, ft/sec
YAW	Mechanical yaw angle of the probe rake (fig. A-1), deg
YAWn n=1,2,3	Corrected mechanical yaw angle of the n^{th} probe, YAW-(TANG) yaw, deg



(a) 40° Probe at positive pitch angle, α.



(b) 40° Probe at positive yaw angle, ψ.

Figure A-1.- Definitions of positive pitch and yaw angles.

PROGRAM LISTING

&

SAMPLE OUTPUT

```
      PROGRAM FFCAL  (INPUT,OUTPUT,TAPE1,TAPE6=OUTPUT)                FFCAL  1
      DIMENSION AH(24),TC(40,5),PROB(40,3,16),PRCA(3,6)               FFCAL  2
      INTEGER G(20),F(16)                                             FFCAL  3
      ICOUNT=0                                                        FFCAL  4
      READ 29,INUM                                                    FFCAL  5
      READ 29,(F(I),I=1,INUM)                                         FFCAL  6
      READ(1,32) (G(I),I=1,20)                                        FFCAL  7
   24 READ(1,1) (AH(I),I=1,20)                                        FFCAL  8
      IF(EOF(1)) 2,3                                                  FFCAL  9
    3 M=AH(1)                                                         FFCAL 10
      READ(1,34) (AH(I),I=21,24)                                      FFCAL 11
      DO 35 I=1,M                                                     FFCAL 12
   35 READ(1,36) (TC(I,K),K=1,5)                                      FFCAL 13
      DO 10 J=1,3                                                     FFCAL 14
      DO 10 I=1,M                                                     FFCAL 15
      READ(1,1) (PROB(I,J,K),K=1,10)                                  FFCAL 16
   10 READ(1,9) (PROB(I,J,K),K=11,16)                                 FFCAL 17
      READ(1,9) ((PRCA(I,J),J=1,6),I=1,3)                             FFCAL 18
      IGROUP=AH(2)                                                    FFCAL 19
      DO 30 I=1,INUM                                                  FFCAL 20
      IF(IGROUP.EQ.F(I)) GO TO 31                                     FFCAL 21
   30 CONTINUE                                                        FFCAL 22
      GO TO 24                                                        FFCAL 23
   31 CONTINUE                                                        FFCAL 24
      ICOUNT=ICOUNT+1                                                 FFCAL 25
      IPAGE=1                                                         FFCAL 26
      DO 37 J=1,3                                                     FFCAL 27
      WRITE(6,33) (G(I),I=1,20)                                       FFCAL 28
      WRITE(6,4) IGROUP,IPAGE                                         FFCAL 29
      IPAGE=IPAGE+1                                                   FFCAL 30
      WRITE(6,7)                                                      FFCAL 31
      WRITE(6,8)         (AH(I),I=3,10),AH(15)                        FFCAL 32
      WRITE(6,5)                                                      FFCAL 33
      WRITE(6,6) (TC(1,K),K=3,5)                                      FFCAL 34
      WRITE(6,11) J,J,J,J,J,J,J,J,J,J                                 FFCAL 35
      WRITE(6,38)                                                     FFCAL 36
      DO 14 I=1,M                                                     FFCAL 37
   14 WRITE(6,12) (TC(I,K),K=1,2),(PROB(I,J,K),K=1,10)                FFCAL 38
   37 CONTINUE                                                        FFCAL 39
      WRITE(6,39)                                                     FFCAL 40
      WRITE(6,40)                                                     FFCAL 41
      DO 49 I=1,3                                                     FFCAL 42
   49 WRITE(6,41) I,(PRCA(I,J),J=2,6)                                 FFCAL 43
      WRITE(6,50) (AH(I),I=11,14)                                     FFCAL 44
      WRITE(6,33) (G(I),I=1,20)                                       FFCAL 45
      WRITE(6,4) IGROUP,IPAGE                                         FFCAL 46
      WRITE(6,7)                                                      FFCAL 47
      WRITE(6,8)         (AH(I),I=3,10),AH(15)                        FFCAL 48
      WRITE(6,5)                                                      FFCAL 49
      WRITE(6,6) (TC(1,K),K=3,5)                                      FFCAL 50
      WRITE(6,42)                                                     FFCAL 51
      DO 43 I=1,M                                                     FFCAL 52
   43 WRITE(6,44) (TC(I,K),K=1,2),(PROB(I,1,K),K=11,16),              FFCAL 53
     1(PROB(I,2,K),K=11,16)                                           FFCAL 54
      WRITE(6,45)                                                     FFCAL 55
      DO 46 I=1,M                                                     FFCAL 56
   46 WRITE(6,44) (TC(I,K),K=1,2),(PROB(I,3,K),K=11,16)               FFCAL 57
```

```
      WRITE(6,47)                                                        FFCAL 58
      WRITE(6,48) (AH(I),I=21,23)                                        FFCAL 59
      IF(ICOUNT.EQ.INUM) GO TO 2                                         FFCAL 60
      GO TO 24                                                           FFCAL 61
    2 STOP                                                               FFCAL 62
    1 FORMAT(10E12.4)                                                    FFCAL 63
    4 FORMAT(/,1X,5HGROUP,I5,2X,4HPAGE,I3)                               FFCAL 64
5     FORMAT(/                          2X,6HDY(IN),                     FFCAL 65
     12X,6HDY(IN),3X,6HDZ(IN))                                           FFCAL 66
6     FORMAT(1X,F6.2,F8.2,F9.2)                                          FFCAL 67
7     FORMAT(/,                2X,4HMACH,2X,7HPO,PSIA,2X,                FFCAL 68
     19HTO,DEG(R),2X,11HRE/FT*10**6,2X,7HPS,PSIA,2X,                     FFCAL 69
     29HTS,DEG(R),2X,7HQS,PSIA,2X,9HVS,FT/SEC,2X,                        FFCAL 70
     39HPREF,PSIA)                                                       FFCAL 71
8     FORMAT(1X,    F5.2,F9.3,F10.2,F11.2,F11.3,F11.2,F10.3,             FFCAL 72
     1F10.1,F11.4)                                                       FFCAL 73
    9 FORMAT(6F12.4)                                                     FFCAL 74
   11 FORMAT(/,2X,5HALPHA,4X,3HYAW,2X,1HP,I1,4H1/PB,2X,1HP,I1,4H2/PB,    FFCAL 75
     12X,1HP,I1,4H3/PB,2X,1HP,I1,4H4/PB,2X,1HP,I1,4H5/PB,2X,             FFCAL 76
     22HPB,I1,3H/PB,2X,7HDP13/PB,I1,2X,7HDP24/PB,I1,3X,                  FFCAL 77
     32HML,I1,4X,2HDV,I1,3H/VB)                                          FFCAL 78
   12 FORMAT(1X,F6.2,F8.2,F7.3,4F8.3,F8.4,2F10.5,F7.3,F9.4)              FFCAL 79
   29 FORMAT(16I5)                                                       FFCAL 80
   32 FORMAT(20A4)                                                       FFCAL 81
   33 FORMAT(1H1,1X,20A4)                                                FFCAL 82
   34 FORMAT(4F12.4)                                                     FFCAL 83
   36 FORMAT(5E12.4)                                                     FFCAL 84
   38 FORMAT(2X,5H(DEG),3X,5H(DEG))                                      FFCAL 85
   39 FORMAT(//,1X,37H* * * PROBE CALIBRATION SUMMARY * * *,/)           FFCAL 86
   40 FORMAT(1X,5HPROBE,2X,10HPB(AVG)/PB,4X,6HETA/PB,3X,                 FFCAL 87
     17HML(AVG),3X,10HDV/VB(AVG),4X,4HTANG,                              FFCAL 88
     2/,2X,3HNO.)                                                        FFCAL 89
   41 FORMAT(/,3X,I1,F12.4,F12.5,F9.3,F12.4,F11.4)                       FFCAL 90
   42 FORMAT(/,1X,5HALPHA,3X,3HYAW,4X,5HDPSQ1,2X,5HPHID1,3X,             FFCAL 91
     14HALP1,3X,4HYAW1,2X,5HALPT1,2X,5HPHIT1,3X,5HDPSQ2,                 FFCAL 92
     22X,5HPHID2,3X,4HALP2,3X,4HYAW2,2X,5HALPT2,2X,5HPHIT2,              FFCAL 93
     3/,1X,5H(DEG),2X,5H(DEG))                                           FFCAL 94
   44 FORMAT(1X,F5.1,F5.1,F10.5,F6.1,3F7.2,F7.1,F9.5,F6.1,3F7.2,F7.1)    FFCAL 95
   45 FORMAT(/,1X,5HALPHA,3X,3HYAW,4X,5HDPSQ3,2X,5HPHID3,3X,             FFCAL 96
     14HALP3,3X,4HYAW3,2X,5HALPT3,2X,5HPHIT3,                            FFCAL 97
     3/,1X,5H(DEG),2X,5H(DEG))                                           FFCAL 98
   47 FORMAT(/,1X,7HETA/PBD,4X,1H1,9X,1H2,9X,1H3)                        FFCAL 99
   48 FORMAT(1X,F14.5,2F10.5)                                            FFCAL100
   55 FORMAT(/,1X,7HAVERAGE,F8.4,F12.5,F9.3,F12.4,F11.4)                 FFCAL101
      END                                                                FFCAL102
```

FLOW FIELD CALIBRATION DATA FROM V41A-V6A JAN-FEB 1978 ENTRY AEDC-TSR-78-V2

GROUP 2 PAGE 1

MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	P8,PSIA	T8,DEG(R)	Q8,PSIA	V8,FT/SEC	PREF,PSIA
1.51	14.454	580.67	3.99	3.881	398.81	6.194	1478.3	.1565

DX(IN)	DY(IN)	DZ(IN)
21.35	-.01	.00

ALPHA (DEG)	YAW (DEG)	P11/P8	P12/P8	P13/P8	P14/P8	P15/P8	P81/P8	DP13/P81	DP24/P81	ML1	DV1/V8
-12.50	-.01	1.334	1.481	2.153	1.534	3.437	1.6254	-.54375	-.03217	1.511	-.0003
-9.99	.00	1.384	1.536	2.045	1.584	3.453	1.6372	-.40365	-.02941	1.509	.0005
-5.00	-.01	1.498	1.611	1.831	1.638	3.447	1.6420	-.20271	-.02263	1.504	.0026
-2.50	-.00	1.559	1.616	1.737	1.654	3.447	1.6416	-.10841	-.02277	1.506	.0020
-1.00	-.01	1.636	1.624	1.686	1.656	3.451	1.6430	-.04917	-.01970	1.506	.0016
-.50	.00	1.623	1.627	1.671	1.659	3.454	1.6447	-.02890	-.01926	1.566	.0016
0.00	.01	1.640	1.625	1.653	1.660	3.456	1.6443	-.00832	-.02089	1.508	.0010
.50	.01	1.651	1.631	1.632	1.658	3.445	1.6404	.01129	-.02208	1.507	.0016
.99	.00	1.669	1.624	1.620	1.664	3.453	1.6444	.02971	-.02417	1.506	.0010
2.49	.01	1.712	1.619	1.576	1.656	3.451	1.6406	.08293	-.02279	1.509	.0036
4.99	.00	1.803	1.614	1.512	1.642	3.445	1.6403	.17706	-.02334	1.505	.0022
9.99	.00	2.011	1.550	1.394	1.598	3.453	1.6355	.37715	-.02323	1.511	-.0003
12.49	-.00	2.122	1.527	1.346	1.544	3.450	1.6295	.47624	-.02282	1.513	-.0015

FLOW FIELD CALIBRATION DATA FROM V41A-V6A JAN-FEB 1978 ENTRY AEDC-TSR-78-V2

GROUP 2 PAGE 2

MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	P8,PSIA	T8,DEG(R)	Q8,PSIA	V8,FT/SEC	PREF,PSIA
1.51	14.454	586.67	3.99	3.881	398.81	6.194	1478.3	.1565

DX(IN)	DY(IN)	DZ(IN)
21.35	-.01	.00

ALPHA (DEG)	YAW (DEG)	P21/P8	P22/P8	P23/P8	P24/P8	P25/P8	P82/P8	DP13/P82	DP24/P82	ML2	DV2/V8
-12.50	-.01	1.339	1.469	2.148	1.533	3.429	1.6222	-.49868	-.03967	1.498	.0057
-9.99	.00	1.393	1.520	2.038	1.580	3.448	1.6329	-.39480	-.03642	1.498	.0055
-5.00	-.01	1.497	1.595	1.826	1.639	3.444	1.6369	-.24077	-.03318	1.496	.0065
-2.50	-.00	1.562	1.607	1.736	1.662	3.444	1.6417	-.14581	-.03376	1.492	.0082
-1.00	-.01	1.606	1.617	1.687	1.675	3.447	1.6463	-.04883	-.03409	1.490	.0094
-.50	.00	1.623	1.624	1.672	1.676	3.451	1.6489	-.02976	-.03114	1.489	.0098
0.00	.01	1.639	1.632	1.658	1.677	3.453	1.6515	-.01133	-.02707	1.487	.0105
.50	.01	1.652	1.627	1.637	1.671	3.442	1.6466	.00892	-.02718	1.487	.0105
.99	.00	1.672	1.633	1.625	1.675	3.450	1.6514	.02820	-.02542	1.486	.0111
2.49	.01	1.718	1.628	1.580	1.661	3.447	1.6467	.08394	-.02028	1.489	.0097
4.99	.00	1.804	1.611	1.514	1.658	3.442	1.6467	.17619	-.02875	1.486	.0112
9.99	.00	2.011	1.568	1.398	1.566	3.449	1.6360	.37451	.00137	1.496	.0062
12.49	-.00	2.122	1.536	1.354	1.518	3.447	1.6325	.47022	.01063	1.496	.0063

FLOW FIELD CALIBRATION DATA FROM V41A-V6A JAN-FEB 1978 ENTRY AEDC-TSR-78-V2

GROUP 2 PAGE 7

MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	PA,PSIA	TA,DEG(R)	QA,PSIA	VA,FT/SEC	PREF,PSIA
1.51	14.454	590.67	3.99	3.881	398.81	6.194	1478.3	.1565

DX(IN)	DY(IN)	DZ(IN)
21.35	-.01	.00

ALPHA (DEG)	YAW (DEG)	P31/PA	P32/PA	P33/PA	P34/PA	P35/PA	PB3/PA	DP13/PB3	DP24/PB3	ML3	DV3/VA
-12.50	-.01	1.349	1.536	2.167	1.522	3.441	1.6438	-.49754	.00841	1.481	.0131
-9.99	.00	1.401	1.594	2.055	1.569	3.455	1.6521	-.34615	.00907	1.482	.0127
-5.00	-.01	1.501	1.535	1.878	1.636	3.448	1.6523	-.26399	-.00062	1.483	.0126
-2.50	-.00	1.568	1.645	1.744	1.651	3.456	1.6520	-.14658	-.00345	1.488	.0102
-1.00	-.01	1.602	1.649	1.695	1.663	3.453	1.6521	-.05624	-.00886	1.487	.0104
-.50	.03	1.620	1.653	1.680	1.669	3.454	1.6553	-.03653	-.00980	1.484	.0119
0.00	.01	1.637	1.652	1.668	1.675	3.457	1.6603	-.01863	-.00743	1.481	.0135
.50	.01	1.647	1.651	1.650	1.669	3.446	1.6541	-.00190	-.01073	1.481	.0131
.99	.00	1.663	1.651	1.643	1.672	3.448	1.6573	.01249	-.01307	1.479	.0141
2.49	.01	1.704	1.644	1.595	1.664	3.447	1.6517	.06577	-.01215	1.484	.0121
4.99	.01	1.791	1.635	1.523	1.655	3.447	1.6485	.16249	-.01805	1.486	.0109
9.99	.00	1.988	1.567	1.419	1.568	3.437	1.6329	.35451	-.00858	1.493	.0076
12.49	-.00	2.103	1.526	1.365	1.518	3.434	1.6281	.45325	.00519	1.495	.0071

* * * PROBE CALIBRATION SUMMARY * * *

PROBE NO.	PB(AVG)/PA	ETA/PB	ML(AVG)	DV/VA(AVG)	TANG
1	1.6391	.01284	1.508	.0010	.2275
2	1.6416	.01331	1.491	.0085	.2721
3	1.6493	.01726	1.485	.0115	.5823
AVERAGE	1.6433	.01880	1.495	.0070	

FLOW FIELD CALIBRATION DATA FROM V41A-V6A JAN-FEB 1978 ENTRY AEDC-TSR-78-V2

GROUP 2 PAGE 4

MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	PA,PSIA	TA,DEG(R)	QA,PSIA	V8,FT/SEC	PREF,PSIA
1.51	14.454	580.67	3.99	3.891	398.91	6.194	1478.3	.1565

DX(IN)	DY(IN)	DZ(IN)
21.35	-.01	.00

ALPHA (DEG)	YAW (DEG)	DPS01	PHI01	ALP1	YAW1	ALPT1	PHIT1	DPS02	PHI02	ALP2	YAW2	ALPT2	PHIT2
-12.5	-.0	-.50478	176.4	-12.74	.47	-12.74	177.9	-.50026	175.5	-12.82	.34	-12.82	178.5
-10.0	.0	-.41472	175.8	-10.23	.48	-10.25	177.3	-.39648	174.7	-10.31	.35	-10.32	178.1
-5.0	-.0	-.20307	173.6	-5.24	.47	-5.26	174.9	-.20349	174.6	-5.32	.34	-5.33	176.4
-2.5	-.0	-.11078	168.1	-2.74	.48	-2.78	170.1	-.11107	162.3	-2.82	.35	-2.84	173.0
-1.0	-.0	-.05297	158.2	-1.24	.47	-1.33	159.1	-.06002	144.5	-1.32	.34	-1.36	165.4
-.5	.0	-.03472	146.3	-.74	.48	-.88	146.9	-.04307	133.7	-.82	.35	-.89	156.8
0.0	.0	-.02249	111.7	-.24	.49	-.54	116.2	-.02934	112.7	-.32	.36	-.48	131.9
.5	.0	.02480	62.9	.26	.49	.55	62.0	.02853	71.8	.18	.36	.40	63.4
1.0	.0	.03830	39.1	.75	.48	.89	32.5	.03797	42.0	.67	.35	.76	27.5
2.5	.0	.08600	15.4	2.25	.49	2.31	12.2	.08625	13.6	2.17	.36	2.20	9.3
5.0	.0	.17860	7.5	4.75	.48	4.78	5.8	.17852	9.3	4.67	.35	4.69	4.3
10.0	.0	.37787	3.5	9.75	.48	9.77	2.8	.37452	-.2	9.67	.35	9.68	2.1
12.5	-.0	.47679	2.7	12.25	.48	12.26	2.2	.47734	-1.3	12.17	.35	12.18	1.6

ALPHA (DEG)	YAW (DEG)	DPS03	PHI03	ALP3	YAW3	ALPT3	PHIT3
-12.5	-.0	-.49761	181.0	-12.74	-.08	-12.74	180.4
-10.0	.0	-.39625	181.3	-10.23	-.07	-10.23	180.4
-5.0	-.0	-.21399	173.8	-5.24	-.08	-5.24	180.9
-2.5	-.0	-.11663	179.2	-2.74	-.07	-2.74	181.5
-1.0	-.0	-.05693	171.1	-1.24	-.08	-1.24	193.5
-.5	.0	-.03782	165.0	-.74	-.37	-.74	195.2
0.0	.0	-.02005	158.3	-.24	-.05	-.25	194.8
.5	.0	.01088	99.5	.26	-.06	.27	-13.2
1.0	.0	.01808	46.3	.75	-.07	.76	-5.2
2.5	.0	.05698	13.5	2.25	-.06	2.25	-1.6
5.0	.0	.15349	6.3	4.75	-.37	4.75	-.8
10.0	.0	.35661	.1	9.75	-.37	9.75	-.4
12.5	-.0	.45328	-.7	12.25	-.07	12.25	-.3

ETA/PBD	1	2	3
	.03863	.13879	.13697

APPENDIX B

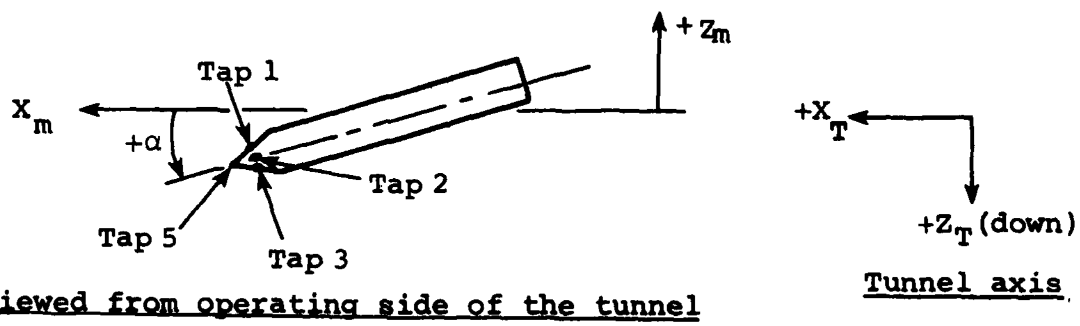
DATA REDUCTION EQUATIONS

This appendix presents the equations used in the data reduction for the flow-field tests and store pressure-distribution tests. They are included in this report for completeness and have been taken almost word for word from the AEDC reports, References 1 through 5.

B.1 PROBE CALIBRATION

1. Pressure Differentials and Associated Flow Angles

    a. Pitch Angle



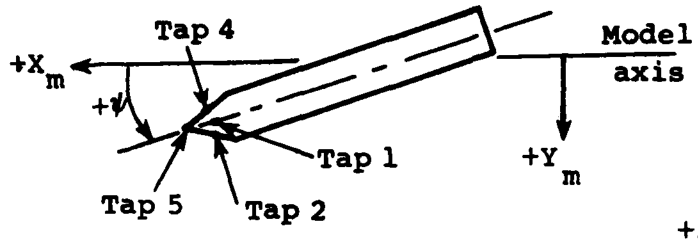
Subscript n refers to probe number (n = 1,2,3)

α = probe angle of attack (ALPHA), positive as shown, deg

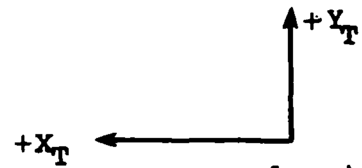
DP13 = $P_1 - P_3$, as shown a positive α produces a positive pressure differential, psia

P_1, P_3 = cone static pressure taps 1 and 3, respectively, psia

b. Yaw Angle



Top view, toward tunnel floor



Tunnel axis

ψ = probe yaw angle (YAW), positive as shown, deg

DP24 = $P_2 - P_4$, as shown, a positive angle of yaw produces a negative pressure differential, psia

P_2, P_4 = cone static pressure of taps 2 and 4, respectively, psia

2. Equivalent Cone Static Pressure at Zero Angle of Attack

PB_n = equivalent cone surface static pressure on the n^{th} probe, psia

$PB_n = (P_{n1} + P_{n2} + P_{n3} + P_{n4})/4$ where P_{nm} is the cone surface static pressure of the n^{th} probe and m^{th} pressure tap on that cone. In this test, three probes were used (i.e., n = 1, 2, and 3) and each probe had five pressure taps (i.e., m = 1, 2, 3, 4, and 5). The fifth pressure tap (P_{n5}) on each probe was a pitot pressure tap.

3. Local Stream Mach Number (Calibration curves extend from $M_\ell = 0.6 \rightarrow M_\ell = 3.0$; outside these ranges data are deleted and replaced by "***" values.)

$$ML_n = \{1 + [A_0 + A_1\ (PB_n/PT_n) + A_2(PB_n/PT_n)^2 + A_3(PB_n/PT_n)^3$$

$$+ A_4(PB_n/PT_n)^4 + A_5(PB_n/PT_n)^5]^{-3}\}^{1/2} \ldots\ldots PB_n/P_{n5} < 0.615$$

$$\text{or}\quad ML_n = 0.3841\ (PB_n/PT_n)^{-2.44} \ldots\ldots\ldots\ldots\ldots\ldots PB_n/P_{n5} \geq 0.615$$

where PT_n is the probe pitot pressure (P_{n5}). For M9A, T9A, and V6A it is interpolated or extrapolated to the same axial location as the probe cone static taps. This is a curve fit of the probe data and the coefficients A_0 through A_5 for the three probes used in the data reduction were as follows:

Coefficients

	Probe No. 1	Probe Nos. 2 & 3
A_0	3.35933	2.57318
A_1	-47.9986	-37.6524
A_2	293.596	241.392
A_3	-835.398	-709.356
A_4	1142.53	997.148
A_5	-600.20	-536.021

$$ML_n = ML_n\ (\text{initial value})/(1 - \Delta M)$$

$\Delta M = m \cdot |\alpha|^{1.70}$ where α is defined as

PROBE CALIBRATION $ALPT_n$ from (9)

or

FLOW FIELD SURVEY ALT from (6)

$$m = -1.5118 \times 10^{-4} + 2.0946 \times 10^{-5}\ (ML_n)^{3.5}$$

ML_n is iterated until $|ML_{n_i} - ML_{n_{i-1}}| \leq 0.005$

If: $(PB_n/P_{n5}) \geq 0.615$

Then: $ML_n = 0.3841\ (PB_n/PT_n)^{-2.44}$

No iteration of this expression is required.

4. Local Normalized Resultant Velocity Ratio

$V_{\ell n}/V_\infty$ = Ratio of resultant local stream velocity normalized by the free-stream velocity

$$V_{\ell n}/V_\infty = (M_{\ell n}/M_\infty)\ \sqrt{T_{\ell n}/T_\infty}$$

$$T_{\ell n}/T_\infty = (1 + 0.2\ M_\infty^2)/(1 + 0.2\ M_{\ell n}^2)$$

5. Incremental Difference Between the Local Stream and Free-Stream Velocities

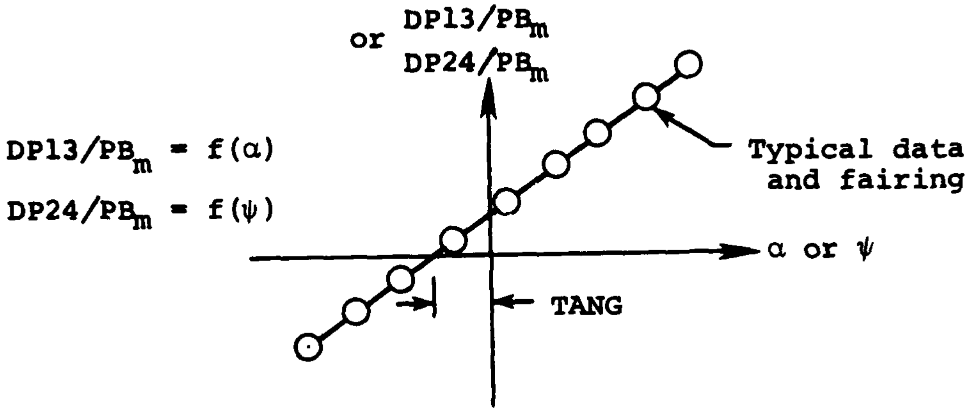
$$DVn/V8 = 1 - (V_{\ell n}/V_\infty) \text{ or } (V_\infty - V_{\ell n})/V_\infty$$

6. Parameter Relating Cone Surface Pressure Differential to Flow Angle

$$(ETA/PB)\ \text{Pitch} = 1/2 \cdot d(DP13/PB_n)d\alpha \text{ for } \psi \text{ constant}$$

$$(ETA/PB)\ \text{Yaw} = -1/2 \cdot d(DP24/PB_n)d\psi \text{ for } \alpha \text{ constant}$$

This slope was defined by means of a linear least squares fit through the data over a ±10° range. Also the intercept of this curve with the pitch or yaw ordinate at zero $DP13/PB_n$ or $DP24/PB_n$ were defined and denoted as (TANG) pitch or (TANG) yaw.



Definition of TANG

Note a positive DP24/PB produces a negative flow angle.

ETA/PB = cone parameter based on the slope

$$(1/2)d(DP13/PBn)/d(ALPHA) \quad deg^{-1}$$

or

$$(1/2)d(DP24/PBn)/d(YAW) \quad deg^{-1}$$

$$(ETA/PB)pitch\ or\ yaw = E_0 + E_1 M_{\ell n}^{5/3} + E_2 M_{\ell n}^{10/3},\ when$$

$$PB_n/P_{n5} < 0.615$$

or if

$$PB_n/P_{n5} \geq 0.615$$

$$(ETA/PB)pitch\ or\ yaw = \frac{0.02}{\frac{PB_n}{P_{n5}}} * 0.7\ M_{\ell n}^2\ (1 + 0.2\ M_{\ell n}^2)^{-3.5}$$

ALT,* α_T = total angle of attack, deg

$$\alpha_T = +[1/2(DPSQn)/(ETA/PB) - ACORR1 - ACORR2]$$

ACORR1 = correction for nonlinear variation of DPSQn with angle of attack, deg

$$ACORR1 = C|DPSQn|^{2.5}$$

$$C = (0.5)^{2.5} \cdot 318.5\, M_{\ell n}^{-5} \cdot (DPSQ_n)/|DPSQ_n|$$

ACORR2 = correction for variations due to the effective roll angle of the probe, deg

$$ACORR2 = P_0 + P_1 \cos\phi_T + P_2(\cos\phi_T)^2 + P_3(\cos\phi_T)^3 + P_4(\cos\phi_T)^4 + P_5(\cos\phi_T)^5$$

P_0 = 0.0640565
P_1 = -0.2562000
P_2 = -0.1979040
P_3 = -0.9707050
P_4 = 0.2111070
P_5 = 1.45475

The parameters ACORR1 and ACORR2 are based on empirical curve fits of the cone flow calibration data as a function of total angle of attack and roll of the cone probe for Mach numbers > 1.257. For the calibration below M_ℓ = 1.257 these corrections are identically zero.

7. Average Values

Values such as PB(AVG)/P8, ML(AVG), and DV/V8(AVG) represent the average value over the angle of attack (yaw) range of the data group.

ALT has been tabulated to ±25° although actual calibration was ±16°; values over ±25° have been replaced by ''; uncertainty in ALT between 16° → 25° is undefined.

8. Corrected Angles of Pitch and Yaw

ALP_n^* = corrected angle of pitch for the n^{th} probe, deg

ALP_n = ALPHA - TANG(n)pitch where TANG(n)pitch is the probe correction based on pitching the probe at zero yaw.

YAW_n = YAW - TANG(n)yaw where TANG(n)yaw is the probe correction based on yawing the probe at zero angle of pitch.

YAW_n = corrected angle of yaw for the n^{th} probe, deg

PROBE MISALIGNMENT FACTOR (TANG)+

Probe	(TANG)pitch, deg	(TANG)yaw, deg
1	+0.24	-0.48
2	+0.32	-0.35
3	+0.24	+0.07

9. Total Angle of Attack, deg

$$ALPT_n^* = \mathrm{Tan}^{-1} \sqrt{|\mathrm{Tan}(ALP_n)|^2 + |\mathrm{Tan}(Yaw_n)|^2}$$

$$ALPT_n^* = \frac{ALP_n}{|ALP_n|} \cdot ALPT_n$$

10. Roll angle of Probe

a. Roll angle based on probe pitch and yaw angle, i.e., on ALP_n and YAW_n, deg

---

*See note about ALT which applies to these calculated angles

+Subject to change from one test installation to another test installation

$$PHIT_n = Tan^{-1}\,[Tan(YAW_n)/Tan(ALP_n)]$$

$$+\ 90°[1 - Tan(ALP_n)/|Tan(ALP_n)|]$$

b. Roll angle based on the probe differential pressure values, namely on DP13/PB and DP24/PB, deg

$$PHID_n = Tan^{-1}\,[(-DP24/PB_n)/(DP13/PB_n)]$$

$$+\ 90°[1-(DP13/PB_n)/|DP13/PB_n|]$$

11. Resultant Pressure Differential

$$DPSQ_n = (|DP13/PB_n|^2 + |DP24/PB_n|^2)^{\frac{1}{2}} * \frac{ALPT_n}{|ALPT_n|}$$

for probe calibrations.

$$DPSQ_n = |DPSQ_n| \text{ for flow-field surveys}$$

12. Parameter Relating Resultant Cone Surface Pressure Differential to Total Flow Angle, deg^{-1}

$$ETA/PBD = d(DPSQ_n)/d(ALPT_n)$$

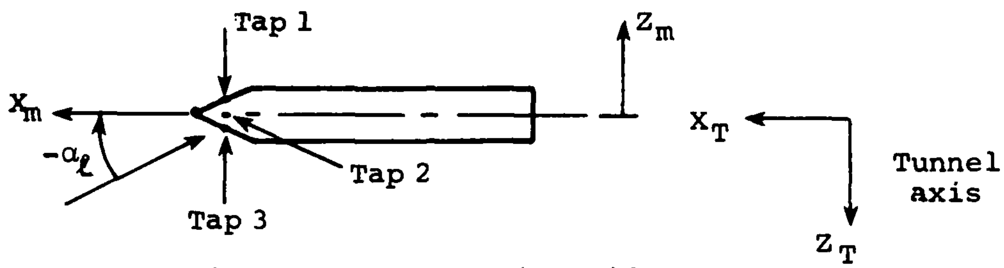
At least four points between ±10° in total angle of attack are required before the slope will be defined. Again a linear least squares fit was used to define this slope.

B.2 FLOW-FIELD SURVEY

13. Pressure Differentials and Associated Flow Angles (as defined in the tabulated data).*

All angles calculated outside calibrated range (16 → 25° and -16 → -25°) are only estimates with undefined uncertainty; '' appears for angle calculations greater than ±25°.

a. Pitch Angles



Viewed from operating side of tunnel

$$ALP_n = + [1/2(DP13/PB_n)/(ETA/PB)pitch - BCORR1 - ACORR2 \times COS(PHIT_n)] + TANG(n)pitch - DALPHA$$

BCORR1 = $C|DP13/PB_n|^{2.5}$ - This correction accounts for the nonlinearity in the variation of the cone static pressure differential with flow angularity for angles greater than 6° to 10°.

$$C = (0.5)^{2.5} \cdot 318.5\ M_\ell^{-5} \cdot (DP13/PB_n)/|DP13/PB_n|$$

TANG(n)pitch = Angle correction associated with misalignment in pitch of the cone nose relative to the cylindrical section of the probe support system, deg.

$$DALPHA = \alpha' - \alpha_p$$

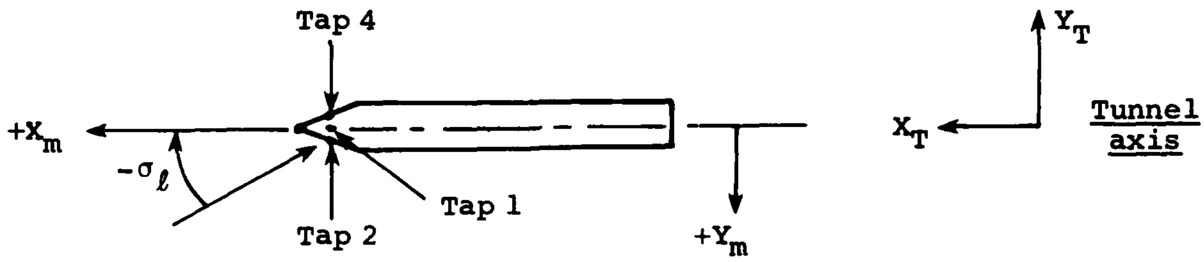
$$\phi_T = Tan^{-1}\ [-DP24/PB_n/(DP13/PB_n)] + 90°[1 - (DP13/PB_n)/|DP13/PB_n|]$$

(Note: $\phi_T \equiv PHIT$)

$ALPL_n^*$ - Flow angle based on total angle of attack and roll angle, deg

$$ALPL_n^* = TAN^{-1}[Tan(\alpha_T) \cdot cos(\phi_T)] + [TANG(n)pitch - DALPHA]$$

b. Yaw Angle (angle of sidewash), deg



Top view toward tunnel floor

$$SIG_n^* = [1/2(-DP24/PB_n)/(ETA/PB)yaw - CCORR1$$

$$- ACORR2 \cdot SIN(PHIT_n)] + TANG(n)yaw$$

$$CCORR1 = C|DP24/PB_n|^{2.5}$$

and

$$C = (0.5)^{2.5} \cdot 318.5\ M_\ell^{-5} \cdot (DP24/PB_n)/|DP24/PB_n$$

TANG(n)yaw = Angle correction associated with misalignment in yaw of the cone nose relative to the cylindrical section of the probe support system, deg

*See note about ALT which applies to these calculated and tabulated flow angles.

$$SIGL_n^* = TAN^{-1}\ [Tan(\alpha_T)\ Sin(\phi_T)] + TANG(n)yaw$$

14. Local Stream Velocity Ratios (See figure 21 for positive directions of velocities.)

$$ALT_n = Tan^{-1}\ [|Tan(ALPL_n)|^2 + |Tan(SIGL_n)|^2]^{1/2}$$

$$PHI_n = Tan^{-1}\ [Tan(SIGL_n)/Tan(ALPL_n)]$$

$$+ 90°[1 - Tan(ALPL_n)/|Tan(ALPL_n)|]$$

a. Axial Velocity Component

$$U_n/V8 = (V_{\ell n}/V_\infty)\ \cos\ (ALT_n)$$

b. Vertical Velocity Component

$$W_n/V8 = (V_{\ell n}/V_\infty)\ \sin\ (ALT_n)\ \cos\ (PHI_n)$$

c. Lateral Velocity or Outwash Velocity Component

$$V_n/V8 = (V_{\ell n}/V_\infty)\ \sin\ (ALT_n)\ \sin\ (PHI_n)$$

15. Local to Free-Stream Dynamic Pressure Ratio

$$QL_n/Q8 = (1.4/2)\ P_\ell M_{\ell n}^2/q_\infty \qquad q_\infty = 0.7\ P_\infty M_\infty^2$$

$$P_\ell = PT_n \cdot \left([5/(6M_{\ell n}^2)]^{3.5}\ [(7M_{\ell n}^2 - 1)/6]^{2.5}\right)$$

The flow-through inlet data reduction equations are shown for the right inlet. Those for the left inlet are similar. Inlet pressure tap locations are described in section 3.3.

---

*See note about ALT which applies to these calculated and tabulated flow angles.

(P/PT)R - Ratio of right inlet average static to average total pressures.

$$(P/PT)R = \frac{(PR3 + PR4 + PR5)}{(PTR1 + PTR2)} \cdot \frac{2}{3}$$

$(V/V_\infty)R$ - Average inlet velocity ratio, assuming the inlet total temperature is equal to the tunnel T_o.

$$(V/V_\infty)R = \left[\frac{1.0 - (A)^{0.28571}}{1.0 - (1.0 + 0.2\ M_\infty^2)^{-1}}\right]^{1/2}$$

if $(P/PT)R \geq 0.5283$: $A = (P/PT)R$

if $(P/PT)R < 0.5283$:

$$A = (P/PT)R \cdot \left(\frac{6M_I^2}{M_I^2 + 5}\right)^{7/2} \cdot \left(\frac{6}{7M_I^2 - 1}\right)^{5/2}$$

where M_I is the average inlet Mach number obtained from an iteration of the following:

$$(PT/P)R = \left(\frac{6M_I^2}{5}\right)^{7/2} \cdot \left(\frac{6}{7M_I^2 - 1}\right)^{5/2}$$

B.3 OGIVE-CYLINDER STORE PRESSURE INTEGRATIONS

The numerical scheme employed to evaluate the local loading coefficients on the store from the model surface pressure data is summarized below so that the local and resultant loading coefficients are clearly defined. At each point in the test grid, consisting of a fixed angle-of-attack and position in the flow field, the store was rolled 360° in 10° increments while surface pressure data along one ray of the store were recorded. These pressure data were

integrated as a function of roll angle to define the local force and moment coefficients per unit length (per inch).

The local normal-force coefficient and the local pitching-moment coefficient attributed to the normal-force loading per inch at model station x_n are

$$LCN_n = -K \int_{-\pi}^{\pi} (P/P_\infty)_n \, r_n \cos\phi \, d\phi$$

and

$$LCM_n = -LCN_n (x_n - 3.188)/(2r_B)$$

where

$K = 2/(\gamma \pi M_\infty^2 r_B^2)$

r_B = body radius at base

r_n = local body radius

Similarly, the local side-force and yawing-moment coefficients per inch were defined as follows:

$$LCY_n = -K \int_{-\pi}^{\pi} (P/P_\infty)_n r_n \sin\phi \, d\phi$$

and

$$LCLN_n = -LCY_n (x_n - 3.188)/(2r_B)$$

The local axial-force coefficient per unit length of the store (i.e., per inch) was defined as follows:

$$LCA_n = K \int_{-\pi}^{\pi} (P/P_\infty - 1)_n (r_n \mathrm{Tan}\delta_n) d\phi$$

where

δ_n = local slope of the body contour

The resultant aerodynamic coefficients were evaluated as follows:

$$CN = \int_0^L LCN_n \, dx_n$$

$$CM = \int_0^L LCM_n \, dx_n - \frac{1}{2r_B} \int_0^{1.5} r_n \operatorname{Tan} \delta_n \, LCN_n dx_n$$

The second integral term used in evaluating the pitching-moment coefficient corresponds to the moment produced by the axial-force component of the surface loading on the store.

$$CY = \int_0^L LCY_n \, dx_n$$

$$CLN = \int_0^L LCLN_n dx_n - \frac{1}{2r_B} \int_0^{1.5} r_n \operatorname{Tan} \delta_n \, LCY_n dx_n$$

The resultant pressure drag coefficient of the store was evaluated using both of the following techniques

$$CA1 = \int_0^{1.5} LCA_n dx_n \qquad CA2 = \int_0^{r_B} \frac{LCA_n}{\operatorname{Tan}\delta} dr_n$$

The numerical procedure for evaluating these integrals consisted of curve fitting three consecutive points in the distribution with a quadratic expression and then integrating this expression to define the magnitude of the integrand between two of the three consecutive points in the distribution. These integrands were then summed to ultimately define a particular coefficient.

B.4 ELLIPTIC STORE PRESSURE INTEGRATIONS

B.4.1 Pressure Distribution Measurements

The pressure-distribution data are presented in absolute form and ratioed to the free-stream static pressure. During this phase of the test a discrepancy was observed between the known pressure applied to the Scanivalve and the measured value. Repeatability checks indicated that the pressure measurements could be made consistent by shifting all the pressure measurements by the difference in the known and measured values. This data reduction scheme was applied to all the data. In addition, if a measured pressure was found to be incorrect because of a leak or restriction in the pressure tube or noise in the transducer signal, the value of this pressure was set to zero.

B.4.2 Pressure Distribution Integrations

The numerical scheme employed to evaluate the local loading coefficients on the store from the model surface pressure data is summarized as follows. At a specific position or attitude in the free stream or interference flow field, four groups of pressure distribution data were combined to describe the surface pressure loadings on the store at eight (8) circumferential positions at each of 14 axial stations. For example, when SEP1 was at 0° roll an axial ray of pressure data is obtained at the two circumferential positions of 0° and 270° while at 180° roll, data at the two positions of 90° and 180° are obtained. When SEP2 is at the same position and attitude in the free-stream or interference flow field as the two groups of SEP1 data and at 0° roll, positions of 55° and 305° are obtained while at 180° roll, the 125° and 235° positions are obtained. If there were pressures set to zero for some reason, values for these pressures were obtained from a straight line interpolation or extrapolation in the x-direction using the two good pressures nearest to them.

To find the local force coefficient at each axial station, the following equations were used:

$$\frac{dC_N}{dx} = \frac{2}{\gamma M_\infty^2 S p_\infty} \frac{dF_z}{dx} \quad \text{Local normal-force coefficient, in.}^{-1}$$

$$\frac{dC_Y}{dx} = \frac{2}{\gamma M_\infty^2 S p_\infty} \frac{dF_y}{dx} \quad \text{Local side-force coefficient, in.}^{-1}$$

$$\frac{dC_A}{dx} = \frac{2}{\gamma M_\infty^2 S p_\infty} \frac{dF_x}{dx} \quad \text{Local axial-force coefficient, in.}^{-1}$$

where

γ = ratio of specific heats for air (1.4)

$\frac{dF_x}{dx}$ = force per in. in x-direction, lbf/in.

$\frac{dF_y}{dx}$ = force per in. in y-direction, lbf/in.

$\frac{dF_z}{dx}$ = force per in. in z-direction, lbf/in.

At each axial station, the force per inch equations can be written as

$$\frac{dF_z}{dx} = - \sum_{n=1}^{N} p_n \, S_n \cos \theta_n$$

$$\frac{dF_y}{dx} = - \sum_{n=1}^{N} p_n \, S_n \sin \theta_n$$

$$\frac{dF_x}{dx} = - \sum_{n=1}^{N} (p_n - p_\infty) S_n \tan \delta_n$$

where

N = Number of divisions the circumferential pressure distribution is divided into ($N = 36$: $\Delta\phi = 10°$)

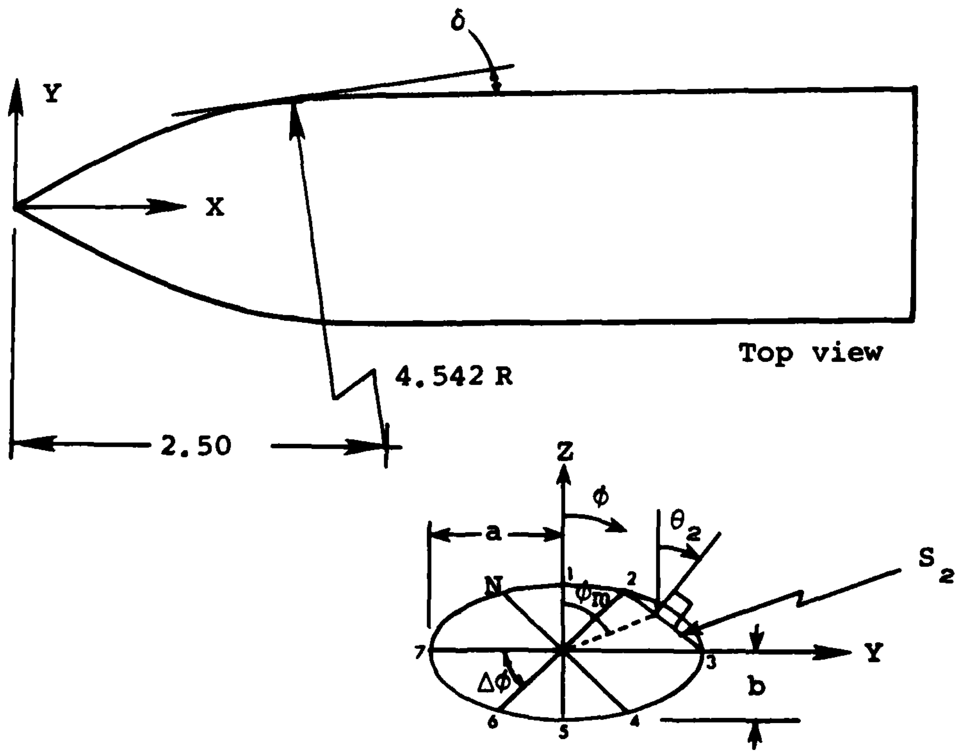
p_n = Value of the pressure at the center of the circumferental division

S_n = Length of the line representing the circumferential division

θ_n = Angle between the normal to S_n and the positive Z axis

δ_n = Body contour slope at the center of the circumferential division

ϕ_m = Angle at the center of the circumferential division = $(n - 1/2)\Delta\phi$



Looking upstream at any cross-section

Simplifying the coefficient equations yields the following:

$$\frac{dC_N}{dx} = \frac{-2}{\gamma M_\infty^2 S} \sum_{n=1}^{N} \frac{p_n}{p_\infty} S_n \cos \theta_n$$

$$\frac{dC_Y}{dx} = \frac{-2}{\gamma M_\infty^2 S} \sum_{n=1}^{N} \frac{p_n}{p_\infty} S_n \sin \theta_n$$

$$\frac{dC_A}{dx} = \frac{2}{\gamma M_\infty^2 S} \sum_{n=1}^{N} \left(\frac{p_n}{p_\infty} - 1\right) S_n \tan \delta_n$$

p_n/p_∞ comes from evaluating p/p_∞ at ϕ_m, which is determined from a straight line interpolation between the two measured values on either side of it. For example, p/p_∞ at $\phi_m = 60°$ is derived using p/p_∞ at 55° and p/p_∞ at 90°.

The equations for evaluating S_n, θ_n, and δ_n are given below:

$$S_n = \sqrt{(y_{n+1} - y_n)^2 + (z_{n+1} - z_n)^2}$$

$$\theta_n = \tan^{-1}\left[\frac{z_n - z_{n+1}}{y_{n+1} - y_n}\right]$$

$$\delta_n = \tan^{-1}\left[\frac{\cos(\phi_m - \theta_n)}{\sqrt{4\cos^2\phi_m + \sin^2\phi_m}} \frac{da}{dx}\right]$$

where

$y_n = r_n \sin \phi_n$

$z_n = r_n \cos \phi_n$

$\phi_n = (n-1)\Delta\phi$

$$r_n = \left(\frac{\cos^2 \phi_n}{b^2} + \frac{\sin^2 \phi_n}{a^2} \right)^{-1/2}$$

$$a = -3.792 + \sqrt{-x^2 + 5x + 14.38}$$

$$b = a/2$$

APPENDIX C

FLOW-FIELD DATA RETRIEVAL PROGRAM

```
              PROGRAM FLOWF   (INPUT,OUTPUT,TAPE6=OUTPUT,TAPE1)                 FLOWF  1
              DIMENSION A(20),B(70,30),C(70,3,16),IPROBE(1),H(4)                FLOWF  2
              INTEGER D(20),F(16)                                               FLOWF  3
              DIMENSION NUMB(20,5),IPRCON(5),CONF(130)                          FLOWF  4
              DO 102 I=1,5                                                      FLOWF  5
              DO 102 J=1,20                                                     FLOWF  6
          102 NUMB(J,I)=26                                                      FLOWF  7
              IPRCON(1)=5                                                       FLOWF  8
              IPRCON(2)=9                                                       FLOWF  9
              IPRCON(3)=15                                                      FLOWF 10
              IPRCON(4)=19                                                      FLOWF 11
              IPRCON(5)=15                                                      FLOWF 12
              NUMB(1,1)=1                                                       FLOWF 13
              NUMB(2,1)=2                                                       FLOWF 14
              NUMB(3,1)=3                                                       FLOWF 15
              NUMB(4,1)=4                                                       FLOWF 16
              NUMB(5,1)=5                                                       FLOWF 17
              NUMB(20,1)=26                                                     FLOWF 18
              NUMB(1,2)=1                                                       FLOWF 19
              NUMB(2,2)=2                                                       FLOWF 20
              NUMB(3,2)=4                                                       FLOWF 21
              NUMB(4,2)=6                                                       FLOWF 22
              NUMB(5,2)=7                                                       FLOWF 23
              NUMB(6,2)=8                                                       FLOWF 24
              NUMB(7,2)=7                                                       FLOWF 25
              NUMB(8,2)=4                                                       FLOWF 26
              NUMB(9,2)=5                                                       FLOWF 27
              NUMB(20,2)=26                                                     FLOWF 28
              NUMB(1,3)=1                                                       FLOWF 29
              NUMB(2,3)=9                                                       FLOWF 30
              NUMB(3,3)=10                                                      FLOWF 31
              NUMB(4,3)=11                                                      FLOWF 32
              NUMB(5,3)=12                                                      FLOWF 33
              NUMB(6,3)=13                                                      FLOWF 34
              NUMB(7,3)=2                                                       FLOWF 35
              NUMB(8,3)=14                                                      FLOWF 36
              NUMB(9,3)=15                                                      FLOWF 37
              NUMB(10,3)=16                                                     FLOWF 38
              NUMB(11,3)=3                                                      FLOWF 39
              NUMB(12,3)=17                                                     FLOWF 40
              NUMB(13,3)=7                                                      FLOWF 41
              NUMB(14,3)=4                                                      FLOWF 42
              NUMB(15,3)=8                                                      FLOWF 43
              NUMB(20,3)=26                                                     FLOWF 44
              NUMB(1,4)=11                                                      FLOWF 45
              NUMB(2,4)=18                                                      FLOWF 46
              NUMB(3,4)=19                                                      FLOWF 47
              NUMB(4,4)=12                                                      FLOWF 48
              NUMB(5,4)=20                                                      FLOWF 49
              NUMB(6,4)=21                                                      FLOWF 50
              NUMB(7,4)=13                                                      FLOWF 51
              NUMB(8,4)=16                                                      FLOWF 52
              NUMB(9,4)=15                                                      FLOWF 53
              NUMB(10,4)=14                                                     FLOWF 54
              NUMB(11,4)=10                                                     FLOWF 55
              NUMB(12,4)=9                                                      FLOWF 56
              NUMB(13,4)=17                                                     FLOWF 57
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      NUMB(14,4)=2                                      FLOWF 58
      NUMB(15,4)=3                                      FLOWF 59
      NUMB(16,4)=4                                      FLOWF 60
      NUMB(17,4)=8                                      FLOWF 61
      NUMB(18,4)=7                                      FLOWF 62
      NUMB(19,4)=1                                      FLOWF 63
      NUMB(20,4)=26                                     FLOWF 64
      NUMB(1,5)=1                                       FLOWF 65
      NUMB(2,5)=18                                      FLOWF 66
      NUMB(3,5)=11                                      FLOWF 67
      NUMB(4,5)=23                                      FLOWF 68
      NUMB(5,5)=16                                      FLOWF 69
      NUMB(6,5)=13                                      FLOWF 70
      NUMB(7,5)=24                                      FLOWF 71
      NUMB(8,5)=7                                       FLOWF 72
      NUMB(9,5)=4                                       FLOWF 73
      NUMB(10,5)=2                                      FLOWF 74
      NUMB(11,5)=28                                     FLOWF 75
      NUMB(12,5)=25                                     FLOWF 76
      NUMB(13,5)=19                                     FLOWF 77
      NUMB(14,5)=14                                     FLOWF 78
      NUMB(15,5)=12                                     FLOWF 79
      NUMB(20,5)=26                                     FLOWF 80
      CONF(1)=4H NO                                     FLOWF 81
      CONF(2)=4HPARE                                    FLOWF 82
      CONF(3)=4HNT                                      FLOWF 83
      CONF(4)=4H                                        FLOWF 84
      CONF(5)=4H                                        FLOWF 85
      CONF(6)=4HN1-B                                    FLOWF 86
      CONF(7)=4H2-W                                     FLOWF 87
      CONF(8)=4H                                        FLOWF 88
      CONF(9)=4H                                        FLOWF 89
      CONF(10)=4H                                       FLOWF 90
      CONF(11)=4HN1-B                                   FLOWF 91
      CONF(12)=4H2-W-                                   FLOWF 92
      CONF(13)=4H(P2)                                   FLOWF 93
      CONF(14)=4HC                                      FLOWF 94
      CONF(15)=4H                                       FLOWF 95
      CONF(16)=4HN1-B                                   FLOWF 96
      CONF(17)=4H2-W-                                   FLOWF 97
      CONF(18)=4H(P2)                                   FLOWF 98
      CONF(19)=4H1/3                                    FLOWF 99
      CONF(20)=4H                                       FLOWF100
      CONF(21)=4HN1-B                                   FLOWF101
      CONF(22)=4H2-W-                                   FLOWF102
      CONF(23)=4H(P2)                                   FLOWF103
      CONF(24)=4H2/3                                    FLOWF104
      CONF(25)=4H                                       FLOWF105
      CONF(26)=4HN1-B                                   FLOWF106
      CONF(27)=4H2-W-                                   FLOWF107
      CONF(28)=4H(P2)                                   FLOWF108
      CONF(29)=4H1/3-                                   FLOWF109
      CONF(30)=4HS                                      FLOWF110
      CONF(31)=4HN1-B                                   FLOWF111
      CONF(32)=4H2-W-                                   FLOWF112
      CONF(33)=4H(P2)                                   FLOWF113
      CONF(34)=4H1/3T                                   FLOWF114
```

```
      CONF(35)=4HS2S3                                          FLOWF115
      CONF(36)=4HN1-B                                          FLOWF116
      CONF(37)=4H2-W-                                          FLOWF117
      CONF(38)=4H(P2)                                          FLOWF118
      CONF(39)=4H1/3-                                          FLOWF119
      CONF(40)=4HT                                             FLOWF120
      CONF(41)=4HN1-B                                          FLOWF121
      CONF(42)=4H1                                             FLOWF122
      CONF(43)=4H                                              FLOWF123
      CONF(44)=4H                                              FLOWF124
      CONF(45)=4H                                              FLOWF125
      CONF(46)=4HN3-B                                          FLOWF126
      CONF(47)=4H1-A3                                          FLOWF127
      CONF(48)=4H                                              FLOWF128
      CONF(49)=4H                                              FLOWF129
      CONF(50)=4H                                              FLOWF130
      CONF(51)=4HN3-B                                          FLOWF131
      CONF(52)=4H2-W-                                          FLOWF132
      CONF(53)=4HA4                                            FLOWF133
      CONF(54)=4H                                              FLOWF134
      CONF(55)=4H                                              FLOWF135
      CONF(56)=4HN3-B                                          FLOWF136
      CONF(57)=4H2-W-                                          FLOWF137
      CONF(58)=4HA5                                            FLOWF138
      CONF(59)=4H                                              FLOWF139
      CONF(60)=4H                                              FLOWF140
      CONF(61)=4HN3-B                                          FLOWF141
      CONF(62)=4H2-W-                                          FLOWF142
      CONF(63)=4HA3                                            FLOWF143
      CONF(64)=4H                                              FLOWF144
      CONF(65)=4H                                              FLOWF145
      CONF(66)=4HN1-B                                          FLOWF146
      CONF(67)=4H2-W-                                          FLOWF147
      CONF(68)=4HP3-1                                          FLOWF148
      CONF(69)=4H/3                                            FLOWF149
      CONF(70)=4H                                              FLOWF150
      CONF(71)=4HN3-B                                          FLOWF151
      CONF(72)=4H2-W-                                          FLOWF152
      CONF(73)=4HA3-P                                          FLOWF153
      CONF(74)=4H3-1/                                          FLOWF154
      CONF(75)=4H3                                             FLOWF155
      CONF(76)=4HN3-B                                          FLOWF156
      CONF(77)=4H2-W-                                          FLOWF157
      CONF(78)=4HA3-(                                          FLOWF158
      CONF(79)=4HP2)-                                          FLOWF159
      CONF(80)=4HC                                             FLOWF160
      CONF(81)=4HN1-B                                          FLOWF161
      CONF(82)=4H2-W-                                          FLOWF162
      CONF(83)=4H(P3)                                          FLOWF163
      CONF(84)=4H- 2/                                          FLOWF164
      CONF(85)=4H3                                             FLOWF165
      CONF(86)=4HN3-B                                          FLOWF166
      CONF(87)=4H2-W-                                          FLOWF167
      CONF(88)=4HA4-(                                          FLOWF168
      CONF(89)=4HP2)-                                          FLOWF169
      CONF(90)=4HC                                             FLOWF170
      CONF(91)=4HN3-B                                          FLOWF171
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            CONF(92)=4H2-W-                                           FLOWF172
            CONF(93)=4HA4-(                                           FLOWF173
            CONF(94)=4HP3)-                                           FLOWF174
            CONF(95)=4H1/3                                            FLOWF175
            CONF(96)=4HN3-B                                           FLOWF176
            CONF(97)=4H2-W-                                           FLOWF177
            CONF(98)=4HA5-(                                           FLOWF178
            CONF(99)=4HP2)-                                           FLOWF179
            CONF(100)=4HC                                             FLOWF180
            CONF(101)=4HN3-B                                          FLOWF181
            CONF(102)=4H2-W-                                          FLOWF182
            CONF(103)=4HA5-(                                          FLOWF183
            CONF(104)=4HP3)-                                          FLOWF184
            CONF(105)=4H1/3                                           FLOWF185
            CONF(106)=4H                                              FLOWF186
            CONF(107)=4H                                              FLOWF187
            CONF(108)=4H                                              FLOWF188
            CONF(109)=4H                                              FLOWF189
            CONF(110)=4H                                              FLOWF190
            CONF(111)=4HN3-B                                          FLOWF191
            CONF(112)=4H2-W-                                          FLOWF192
            CONF(113)=4HA4-F                                          FLOWF193
            CONF(114)=4H                                              FLOWF194
            CONF(115)=4H                                              FLOWF195
            CONF(116)=4HN3-B                                          FLOWF196
            CONF(117)=4H2-W-                                          FLOWF197
            CONF(118)=4HA3-F                                          FLOWF198
            CONF(119)=4H                                              FLOWF199
            CONF(120)=4H                                              FLOWF200
            CONF(121)=4HN3-B                                          FLOWF201
            CONF(122)=4H2-W-                                          FLOWF202
            CONF(123)=4HA5-F                                          FLOWF203
            CONF(124)=4H                                              FLOWF204
            CONF(125)=4H                                              FLOWF205
            CONF(126)=4HUNKN                                          FLOWF206
            CONF(127)=4HOWN                                           FLOWF207
            CONF(128)=4H                                              FLOWF208
            CONF(129)=4H                                              FLOWF209
            CONF(130)=4H                                              FLOWF210
            ICOUNT=0                                                  FLOWF211
            READ(1,30) (D(I),I=1,20)                                  FLOWF212
            READ 32,INUM,IENTRY                                       FLOWF213
            READ 32,(F(I),I=1,INUM)                                   FLOWF214
     23     READ(1,1) (A(I),I=1,10)                                   FLOWF215
            IF(EOF(1)) 2,3                                            FLOWF216
      3     M=A(1)                                                    FLOWF217
            READ(1,4) (A(I),I=11,18)                                  FLOWF218
            IF(A(16).LT.0.25.OR.A(16).GT.3.50) A(16)=9999999999.      FLOWF219
            IF(A(16).GT.0.25.AND.A(16).LT.1.50) A(16)=0.81            FLOWF220
            IF(A(16).GT.1.50.AND.A(16).LT.2.50) A(16)=1.63            FLOWF221
            IF(A(16).GT.2.50.AND.A(16).LT.3.50) A(16)=3.25            FLOWF222
            DO 10 I=1,M                                               FLOWF223
            READ(1,1) (B(I,J),J=1,20)                                 FLOWF224
     10     READ(1,5) (B(I,J),J=21,29)                                FLOWF225
            H(1)=B(1,3)                                               FLOWF226
            H(2)=B(1,4)                                               FLOWF227
            H(3)=B(1,8)                                               FLOWF228
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      H(5)=B(1,12)                                                     FLOWF229
      II=A(2)                                                          FLOWF230
      DO 25 J=1,3                                                      FLOWF231
      DO 26 I=1,M                                                      FLOWF232
      READ(1,1) (C(I,J,K),K=1,10)                                      FLOWF233
   26 READ(1,28) (C(I,J,K),K=11,16)                                    FLOWF234
   25 CONTINUE                                                         FLOWF235
      DO 33 I=1,INUM                                                   FLOWF236
      IF(II.EQ.F(I)) GO TO 34                                          FLOWF237
   33 CONTINUE                                                         FLOWF238
      GO TO 23                                                         FLOWF239
   34 WRITE(6,31) (D(I),I=1,20)                                        FLOWF240
      ICONFG=A(11)                                                     FLOWF241
      IDY=20                                                           FLOWF242
      IL=IRECON(IENTRY)                                                FLOWF243
      DO 101 I=1,IL                                                    FLOWF244
      IF(ICONFG.EQ.I) IDY=I                                            FLOWF245
101   CONTINUE                                                         FLOWF246
      IDXX=NUMB(IDX,IENTRY)                                            FLOWF247
      IDXX=[illegible]                                                 FLOWF248
      [illegible]                                                      FLOWF249
      ICOUNT=ICOUNT+1                                                  FLOWF250
      DX=[illegible]                                                   FLOWF251
      DALPHA=B(1,1)-A(13)                                              FLOWF252
      IF(ABS(DALPHA).GT.0.05.AND.IENTRY.EQ.5)DX=1.5*SIN(DALPHA/57.29578)FLOWF253
      WRITE(6,6) II,IPAGE                                              FLOWF254
      WRITE(6,7)                                                       FLOWF255
      INIDXX=IDXX+4                                                    FLOWF256
      WRITE(6,8)     (A(I),I=3,10),A(15),(CONF(I),I=IDXX,INIDXX)       FLOWF257
      WRITE(6,12)                                                      FLOWF258
      WRITE(6,9) A(13),B(1,1),(H(I),I=1,4),A(16)                       FLOWF259
      IPAGE=IPAGE+1                                                    FLOWF260
      WRITE(6,13)                                                      FLOWF261
      DO 15 I=1,M                                                      FLOWF262
      B(I,2)=B(I,2)-2.0*DX                                             FLOWF263
   15 WRITE(6,14) B(I,2),(B(I,J),J=5,7),(B(I,J),J=9,11),               FLOWF264
     1(B(I,J),J=13,15)                                                 FLOWF265
      DO 17 J=1,3                                                      FLOWF266
      WRITE(6,31) (D(I),I=1,20)                                        FLOWF267
      WRITE(6,6) II,IPAGE                                              FLOWF268
      IPAGE=IPAGE+1                                                    FLOWF269
      WRITE(6,7)                                                       FLOWF270
      WRITE(6,8)     (A(I),I=3,10),A(15),(CONF(I),I=IDXX,INIDXX)       FLOWF271
      WRITE(6,12)                                                      FLOWF272
      WRITE(6,9) A(13),B(1,1),(H(I),I=1,4),A(16)                       FLOWF273
      IPROBE(1)=J                                                      FLOWF274
      WRITE(6,16) (IPROBE(I),I=1,17)                                   FLOWF275
      WRITE(6,19)                                                      FLOWF276
      FIM1=J-1                                                         FLOWF277
      DO 20 I=1,M                                                      FLOWF278
      BIZOUT=B(I,2)+FIM1*DX                                            FLOWF279
   20 WRITE(6,18) BIZOUT,(C(I,J,K),K=3,16)                             FLOWF280
   17 CONTINUE                                                         FLOWF281
      IF(A(16).GT.4.0) GO TO 23                                        FLOWF282
      WRITE(6,31) (D(I),I=1,20)                                        FLOWF283
      WRITE(6,6) II,IPAGE                                              FLOWF284
      WRITE(6,7)                                                       FLOWF285
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      WRITE(6,8)    (A(I),I=3,10),A(15),(CONF(I),I=IDXX,INIDXX)         FLOWF286
      WRITE(6,12)                                                       FLOWF287
      WRITE(6,9) A(13),B(1,1),(H(I),I=1,4),A(16)                        FLOWF288
      WRITE(6,21)                                                       FLOWF289
      DO 24 I=1,M                                                       FLOWF290
   24 WRITE(6,22) B(I,2),(B(I,J),J=21,26),B(I,28),                      FLOWF291
     1(B(I,J),J=16,20),B(I,27),B(I,29)                                  FLOWF292
      IF(ICOUNT.EQ.INUM) GO TO 2                                        FLOWF293
      GO TO 23                                                          FLOWF294
    2 STOP                                                              FLOWF295
    1 FORMAT(10E12.4)                                                   FLOWF296
    4 FORMAT(8E12.4)                                                    FLOWF297
    5 FORMAT(9E12.4)                                                    FLOWF298
    6 FORMAT(//,1X,5HGROUP,I5,2X,4HPAGE,I3)                             FLOWF299
    7 FORMAT(/,2X              ,6HMACH,2X,7HPO,PSIA,2X,                 FLOWF300
     19HTO,DEG(P),2X,11HRE/FT*10**6,2X,7HPA,PSIA,2X,                    FLOWF301
     29HTA,DEG(P),2X,7HQA,PSIA,2X,9HVA,FT/SEC,2X,                       FLOWF302
     39HPREF,PSIA,2X,9HCONF(PAR)                                        FLOWF303
    8 FORMAT(1X     ,F5.2,F9.3,F           1.2,F11.3,F11.2,F10.3,       FLOWF304
     1F10.1,F11.4,2X,5A4)                                               FLOWF305
    9 FORMAT(3X,F6.2,F13.2,F1              F9.2,F8.2,4X,F5.2)           FLOWF306
   12 FORMAT(/,2X,10HALPHA(PA              ALPHA(RAKE),2X,6HY1(IN),     FLOWF307
     12X,6HZ1(IN),3X,6HZ2(IN),            (IN)          ,6X,2HLP)       FLOWF308
   13 FORMAT(/,2X,6HX1(IN),4X,6HPB1/PB,3X,8HDP13/PB1,2X,                FLOWF309
     18HDP24/PB1,3X,6HPB2/PB,3X,8HDP13/PB2,2X,8HDP24/PB2,               FLOWF310
     23X,6HPB3/PB,3X,8HDP13/PB3,2X,8HDP24/PB3,/)                        FLOWF311
   14 FORMAT(1X,F7.3,3(F10.3,2F10.4))                                   FLOWF312
   16 FORMAT(/,2X,1HX,I1,4H(IN),3X,3HALT,I1,3X,3HPHI,I1,3X,             FLOWF313
     14HALPL,I1,3X,                                                     FLOWF314
     14HSIGL,I1,3X,3HALP,I1,3X,3HSIG,I1,3X,2HML,I1,3X,                  FLOWF315
     22HDV,I1,3H/V0,3X,1HU,I1,3H/V0,3X,1HV,I1,3H/V0,3X,                 FLOWF316
     31HW,I1,3H/V0,3X,2HQL,I1,3H/Q0,3X,1HP,I1,4H5/PB,                   FLOWF317
     4I1,3X,2HPT,I1,3H/PB,I1)                                           FLOWF318
   18 FORMAT(1X,F7.3,F7.2,F7.2,2F8.2,2F7.2,F6.3,F9.4,                   FLOWF319
     13F8.4,F9.4,F10.4,F10.4)                                           FLOWF320
   19 FORMAT(10X,5H(DEG),2X,5H(DEG),3X,5H(DEG),3X,5H(DEG),              FLOWF321
     12X,5H(DEG),2X,5H(DEG))                                            FLOWF322
   21 FORMAT(/,3X,5HX(IN),3X,4HPTL1,5X,4HPTL2,5X,3HPL3,                 FLOWF323
     16X,3HPL4,6X,3HPL5,5X,7H(P/PT)L,2X,7H(V/V0)L,3X,                   FLOWF324
     24HPTR1,5X,4HPTR2,5X,3HPR3,6X,3HPR4,6X,3HPR5                       FLOWF325
     35X,7H(P/PT)R,2X,7H(V/V0)R)                                        FLOWF326
   22 FORMAT(1X,F7.2,14F9.4)                                            FLOWF327
   28 FORMAT(6E12.4)                                                    FLOWF328
   30 FORMAT(20A4)                                                      FLOWF329
   31 FORMAT(1H1,1X,20A4)                                               FLOWF330
   32 FORMAT(16I5)                                                      FLOWF331
      END                                                               FLOWF332
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FLOW FIELD DATA FROM V41A-T9A SEPTEMBER 1977 TUNNEL ENTRY AEDC-DR-77-98

GROUP 10 PAGE 1

MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	P8,PSIA	T8,DEG(R)	Q8,PSIA	V8,FT/SEC	PREF,PSIA	CONF(PAR)
1.51	14.482	581.41	3.99	3.888	399.31	6.206	1479.6	-.0012	NJ-B2-W-A4-(P3)-1/3

ALPHA(PAR)	ALPHA(RAKE)	Y1(IN)	Z1(IN)	Z2(IN)	Z3(IN)	LP
5.00	5.00	-7.50	1.37	2.87	4.37	.81

X1(IN)	PB1/P8	DP13/PB1	DP24/PB1	PB2/P8	DP13/PB2	DP24/PB2	PB3/P8	DP13/PB3	DP24/PB3
-15.004	1.901	.1480	.3199	1.552	.2333	.0256	1.615	.1880	.0486
-15.504	2.147	.1657	.2529	1.533	.2315	.0381	1.572	.2045	.0491
-16.004	2.105	.1564	.2625	2.235	-.0258	.1866	1.540	.2210	.0407
-16.504	1.641	.2699	.1250	1.957	.0439	.1575	1.530	.2314	.0256
-17.005	1.261	.3938	-.1393	1.691	.1236	.0947	1.948	-.1519	.2313
-17.504	1.192	.3732	-.1042	1.599	.1386	.0291	1.918	.0187	.0972
-18.005	1.640	.0059	.0477	1.478	.2513	-.0810	1.802	.0719	.0213
-18.503	2.012	.0252	.0778	1.573	.2136	.0904	1.684	.1345	.0293
-19.004	2.233	-.0651	.0506	1.582	.2401	.1025	1.604	.1703	.0373
-19.504	2.385	-.1092	.0694	1.563	.2442	.1181	1.664	.1063	.0970
-20.004	2.207	-.1071	.0760	1.851	.0457	.1122	1.639	.1585	.0928
-20.501	1.975	-.0475	.0756	2.098	-.1258	.0461	1.592	.1832	.0830
-21.000	1.886	-.0447	.0619	2.021	-.0398	.0393	1.591	.1994	.0765
-21.501	1.638	.0238	.0642	1.928	-.1235	.0327	1.761	.0010	.0711
-22.000	1.575	.1288	.0418	1.831	.0110	.0247	2.024	-.0203	.0447
-22.501	1.453	.1209	.0527	1.745	.0485	.0231	1.940	.0097	.0353
-22.999	1.479	.1357	.0372	1.668	.0943	.0280	1.853	.0363	.0268
-23.501	1.524	.1679	-.0047	1.652	.1054	.0286	1.816	.0518	.0367
-24.000	1.458	.2315	-.0292	1.657	.1233	.0316	1.775	.0756	.0288
-24.500	1.524	.1849	-.0579	1.623	.1515	.0383	1.722	.1009	.0268
-26.001	1.650	.2128	.0358	1.644	.1964	.0753	1.729	.1112	.0565
-26.499	1.654	.2073	.0394	1.753	.1144	.0815	1.690	.1238	.0479
-27.000	1.657	.2482	.0767	1.711	.1304	.0773	1.681	.1226	.0427
-27.501	1.652	.2157	.0327	1.709	.1386	.0798	1.668	.1315	.0485
-28.000	1.633	.2240	.0292	1.690	.1521	.0917	1.659	.1358	.0644

FLOW FIELD DATA FROM V41A-T9A SEPTEMBER 1977 TUNNEL ENRTY AEDC-DR-77-98

GROUP 10 PAGE 2

MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	P8,PSIA	T8,DEG(R)	Q8,PSIA	V8,FT/SEC	PREF,PSIA	CONF(PAR)
1.51	14.482	581.41	3.99	3.888	399.31	6.206	1479.6	-.0012	N3-B2-W-A4-(P3)-1/3

ALPHA(PAR)	ALPHA(RAKE)	Y1(IN)	Z1(IN)	Z2(IN)	Z3(IN)	LP
5.00	5.00	-3.50	1.37	2.87	4.37	.81

Y1(IN)	ALT1 (DEG)	PHI1 (DEG)	ALPL1 (DEG)	SIGL1 (DEG)	ALP1 (DEG)	SIG1 (DEG)	ML1	DV1/V8	U1/V8	V1/V8	W1/V8	QL1/Q8	P15/P81	PT1/P81
-15.004	11.49	-65.24	4.87	-13.45	5.16	-12.36	1.296	.1041	.0780	-.1620	.0747	.9413	1.7736	1.8157
-15.504	10.76	-57.19	5.88	-9.07	6.14	-10.44	1.246	.1303	.8544	-.1365	.0800	.9658	1.6923	1.6813
-16.004	10.82	-59.54	5.54	-9.36	5.81	-10.82	1.247	.1298	.8547	-.1408	.0828	.9510	1.6930	1.6879
-16.504	7.94	-27.90	7.37	-3.63	7.11	-3.80	1.507	.0013	.9891	-.0628	.1228	1.0001	2.1552	2.1045
-17.005	8.10	16.17	7.78	2.27	7.83	2.39	1.792	-.1175	1.1064	.0438	.1512	.9658	2.5781	2.5196
-17.504	7.48	12.04	7.31	1.57	7.33	1.64	1.797	-.1194	1.1099	.0304	.1425	.9168	2.5051	2.5281
-18.005	1.86	-79.74	.36	-1.83	.36	-1.84	1.402	.0509	.9487	-.0302	.0060	.9085	1.8846	1.9640
-18.503	3.38	-71.23	1.09	-3.20	1.10	-3.26	1.270	.1175	.8809	-.0493	.0167	.9497	1.7505	1.7475
-19.004	3.30	225.79	-2.33	-2.36	-2.34	-2.41	1.161	.1767	.8219	-.0339	-.0330	.9045	1.5670	1.5734
-19.504	5.51	217.29	-4.39	-3.34	-4.63	-3.56	1.029	.2539	.7427	-.0434	-.0570	.8453	1.4921	1.4968
-20.004	4.66	219.87	-3.63	-2.93	-3.72	-3.01	1.251	.1275	.8697	-.0445	-.0552	.9604	1.6296	1.6226
-20.501	3.93	227.56	-2.59	-2.83	-2.61	-2.90	1.283	.1109	.8871	-.0439	-.0401	.9529	1.7869	1.7779
-21.000	2.41	241.73	-1.14	-2.12	-1.15	-2.15	1.370	.0666	.9326	-.0345	-.0186	.9689	1.9313	1.9203
-21.501	2.40	-68.97	.96	-2.24	.87	-2.26	1.405	.0116	.9875	-.0387	.0149	.9776	2.0830	2.0722
-22.000	2.01	-57.88	1.07	-1.71	1.07	-1.71	1.514	-.0019	1.0013	-.0298	.0187	.9637	2.1280	2.1102
-22.501	3.49	-28.78	3.06	-1.68	3.06	-1.70	1.606	-.0425	1.0465	-.0365	.0556	.9587	2.2493	2.2332
-22.999	3.66	-21.03	3.41	-1.31	3.42	-1.33	1.559	-.0214	1.0193	-.0234	.0608	.9381	2.1500	2.1679
-23.501	4.13	-4.44	4.12	-.32	4.12	-.32	1.542	-.0144	1.0117	-.0057	.0728	.9546	2.1529	2.1473
-24.000	5.32	2.34	5.31	.22	5.32	.23	1.613	-.0452	1.0407	.0040	.0968	.9673	2.2323	2.2429
-24.500	4.75	11.76	4.66	.97	4.66	1.00	1.555	-.0200	1.0165	.0172	.0828	.9649	2.1580	2.1643
-26.001	5.89	-13.36	5.74	-1.37	5.74	-1.40	1.459	.0238	.9711	-.0232	.0975	.9638	2.0435	2.0407
-26.499	5.69	-14.85	5.50	-1.46	5.50	-1.49	1.460	.0233	.9719	-.0248	.0936	.9672	2.0412	2.0410
-27.000	5.82	-13.83	5.65	-1.40	5.65	-1.43	1.454	.0261	.9689	-.0236	.0959	.9641	2.0318	2.0343
-27.501	5.90	-12.45	5.76	-1.28	5.76	-1.30	1.465	.0207	.9741	-.0217	.0983	.9738	2.0517	2.0490
-28.000	6.00	-11.25	5.98	-1.17	5.89	-1.20	1.477	.0150	.9796	-.0201	.1010	.9697	2.0677	2.0650

FLOW FIELD DATA FROM V41A-T9A SEPTEMBER 1977 TUNNEL ENRTY AEDC-DR-77-98

GROUP 19 PAGE 3

MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	P8,PSIA	T8,DEG(R)	Q8,PSIA	V8,FT/SEC	PREF,PSIA	CONF(PAR)
1.51	14.482	581.41	3.99	3.988	399.31	6.206	1479.6	-.0012	N3-B2-W-A4-(P3)-1/3

ALPHA(PAR)	ALPHA(RAKE)	Y1(IN)	Z1(IN)	Z2(IN)	Z3(IN)	LP
5.80	5.80	-7.50	1.37	2.87	4.37	.81

X2(IN)	ALT2 (DEG)	PHI2 (DEG)	ALPL2 (DEG)	SIGL2 (DEG)	ALP2 (DEG)	SIG2 (DEG)	ML2	DV2/V8	U2/V8	V2/V8	W2/V8	QL2/Q8	P25/PB2	PT2/PB2
-15.004	5.60	-9.12	5.61	-.90	5.61	-.92	1.550	-.0180	1.0130	-.0160	.0994	.9061	2.1757	2.1745
-15.504	5.53	-12.21	5.41	-1.17	5.41	-1.20	1.585	-.0331	1.0283	-.0211	.0974	1.0012	2.1943	2.2197
-16.004	7.11	263.41	-.92	-7.76	-.87	-7.81	1.180	.1660	.8276	-.1026	-.0118	.9200	1.5679	1.5841
-16.504	5.69	-74.89	1.57	-5.47	1.60	-5.77	1.308	.0977	.8978	-.0860	.0245	.9867	1.8577	1.8486
-17.005	4.73	-39.45	3.66	-3.61	3.67	-3.68	1.467	.0198	.9768	-.0514	.0625	1.0023	2.0794	2.0662
-17.504	3.67	-16.03	3.53	-1.02	3.53	-1.03	1.510	-.0001	.9981	-.0177	.0616	.9831	2.1395	2.1216
-18.005	6.00	14.79	5.80	1.54	5.81	1.60	1.619	-.0479	1.0421	.0280	.1059	.9863	2.2715	2.2664
-18.503	6.19	-25.86	5.61	-2.63	5.63	-2.71	1.508	.0010	.9932	-.0456	.0976	.9655	2.1043	2.1199
-19.004	6.80	-25.84	6.16	-2.89	6.19	-3.00	1.524	-.0062	.9992	-.0584	.1079	.9843	2.1429	2.1489
-19.504	6.83	-27.63	6.05	-3.18	6.08	-3.30	1.567	-.0254	1.0181	-.0565	.1080	1.0078	2.1678	2.1969
-20.004	4.20	-67.90	1.58	-3.90	1.60	-4.01	1.353	.0752	.9223	-.0628	.0255	.9827	1.9148	1.9184
-20.501	4.71	204.06	-4.31	-1.93	-4.32	-1.97	1.249	.1205	.8685	-.0292	-.0654	.9457	1.6688	1.6823
-21.000	1.80	234.21	-1.05	-1.46	-1.06	-1.47	1.281	.1117	.8879	-.0226	-.0163	.9783	1.7988	1.7845
-21.501	1.28	246.58	-.51	-1.17	-.51	-1.18	1.312	.0955	.9043	-.0185	-.0080	.9756	1.8565	1.8446
-22.000	1.29	-66.62	.51	-1.18	.51	-1.18	1.362	.0704	.9294	-.0191	.0083	.9817	1.9289	1.9229
-22.501	1.95	-32.29	1.56	-.99	1.56	-.99	1.421	.0414	.9581	-.0165	.0261	.9923	2.0099	2.0050
-22.999	2.77	-21.80	2.57	-1.03	2.57	-1.04	1.471	.0178	.9811	-.0176	.0440	.9918	2.0786	2.0708
-23.501	3.00	-20.11	2.82	-1.03	2.82	-1.04	1.480	.0139	.9848	-.0178	.0485	.9897	2.0799	2.0819
-24.000	3.47	-18.69	3.29	-1.11	3.29	-1.12	1.479	.0140	.9842	-.0191	.0565	.9926	2.0824	2.0816
-24.500	4.12	-17.81	3.92	-1.26	3.92	-1.28	1.504	.0028	.9946	-.0219	.0682	.9925	2.1125	2.1134
-26.001	5.75	-23.34	5.28	-2.28	5.29	-2.35	1.483	.0122	.9828	-.0392	.0908	.9885	2.0862	2.0888
-26.499	4.60	-37.62	3.65	-2.81	3.66	-2.87	1.399	.0522	.9447	-.0464	.0602	.9766	1.9739	1.9764
-27.000	4.66	-33.89	3.91	-2.55	3.92	-2.60	1.436	.0346	.9622	-.0428	.0657	.9863	2.0243	2.0254
-27.501	4.94	-32.31	4.10	-2.59	4.11	-2.65	1.442	.0316	.9649	-.0437	.0691	.9908	2.0355	2.0337
-28.000	5.27	-33.21	4.42	-2.89	4.43	-2.97	1.455	.0257	.9702	-.0491	.0749	.9914	2.0523	2.0505

FLOW FIELD DATA FROM V41A-T9A SEPTEMBER 1977 TUNNEL EMPTY AEDC-DR-77-98

GROUP 10 PAGE 4

MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	P8,PSIA	T8,DEG(R)	Q8,PSIA	V8,FT/SEC	PREF,PSIA	CONF(PAR)
1.51	14.482	581.41	3.99	3.888	399.31	6.216	1479.6	-.0012	N3-B2-W-A4-(P3)-1/3

ALPHA(PAR)	ALPHA(RAKE)	Y1(IN)	Z1(IN)	Z2(IN)	Z3(IN)	LP
5.00	5.00	-3.50	1.37	2.87	4.37	.81

X3(IN)	ALT3 (DEG)	PHT3 (DEG)	ALPLT (DEG)	SIGL3 (DEG)	ALPT (DEG)	SIG3 (DEG)	ML3	DV3/V8	U3/V8	V3/V8	W3/V8	QL3/Q8	P35/PB3	PT3/PB3
-15.004	4.82	-12.98	4.70	-1.09	4.70	-1.12	1.504	.0026	.9939	-.0188	.0817	.9882	2.1184	2.1148
-15.504	5.05	-12.04	4.94	-1.06	4.94	-1.09	1.535	-.0111	1.0071	-.0186	.0870	.9865	2.1598	2.1539
-16.004	5.20	-8.99	5.14	-.81	5.14	-.84	1.564	-.0243	1.0201	-.0145	.0917	.9896	2.1929	2.1928
-16.504	5.28	-4.85	5.26	-.45	5.26	-.46	1.578	-.0304	1.0260	-.0080	.0945	.9944	2.2127	2.2114
-17.005	8.77	236.04	-4.92	-7.29	-5.12	-8.30	1.267	.1190	.8707	-.1114	-.0750	.9268	1.7311	1.7632
-17.504	3.12	-79.15	.59	-3.06	.59	-3.15	1.313	.0951	.9035	-.0483	.0093	.9723	1.8562	1.8472
-18.005	2.09	-13.09	2.04	-.47	2.04	-.48	1.377	.0633	.9361	-.0078	.0333	.9809	1.9515	1.9439
-18.503	3.56	-10.19	3.50	-.63	3.51	-.64	1.453	.0264	.9717	-.0187	.0595	.9856	2.0587	2.0475
-19.004	4.28	-10.60	4.21	-.79	4.21	-.81	1.508	.0011	.9962	-.0137	.0732	.9844	2.1197	2.1186
-19.504	4.10	-41.21	3.09	-2.78	3.10	-2.77	1.458	.0242	.9733	-.0459	.0525	.9779	2.0466	2.0539
-20.004	4.89	-29.12	4.27	-2.38	4.29	-2.46	1.489	.0096	.9868	-.0411	.0737	.9901	2.1034	2.0951
-20.501	5.11	-23.08	4.70	-2.01	4.71	-2.07	1.514	-.0020	.9980	-.0350	.0820	.9826	2.1266	2.1279
-21.000	5.31	-19.69	5.10	-1.79	5.01	-1.85	1.523	-.0058	1.0015	-.0313	.0876	.9888	2.1433	2.1388
-21.501	1.99	-89.98	.09	-1.99	.08	-2.02	1.372	.0655	.9340	-.0324	.0000	.9538	1.9191	1.9375
-22.000	1.44	242.17	-.67	-1.27	-.67	-1.29	1.262	.1218	.8780	-.0195	-.0103	.9455	1.7240	1.7344
-22.501	1.11	-74.29	.30	-1.07	.30	-1.08	1.309	.0972	.9026	-.0169	.0047	.9773	1.8425	1.8309
-22.999	1.52	-37.91	1.28	-.83	1.28	-.83	1.350	.0765	.9231	-.0133	.0206	.9803	1.9090	1.9049
-23.501	2.03	-32.59	1.71	-1.09	1.71	-1.10	1.374	.0645	.9349	-.0179	.0280	.9859	1.9413	1.9405
-24.000	2.27	-17.83	2.16	-.69	2.16	-.70	1.404	.0561	.9492	-.0115	.0358	.9923	1.9855	1.9813
-24.500	2.74	-11.76	2.68	-.56	2.68	-.57	1.433	.0358	.9631	-.0094	.0451	.9902	2.0208	2.0212
-26.001	3.57	-25.15	3.24	-1.52	3.24	-1.55	1.419	.0427	.9554	-.0254	.0540	.9813	2.0084	2.0025
-26.499	3.56	-19.23	3.36	-1.17	3.37	-1.20	1.453	.0263	.9718	-.0199	.0571	.9891	2.0482	2.0478
-27.000	3.44	-17.16	3.29	-1.02	3.30	-1.04	1.454	.0259	.9723	-.0173	.0559	.9850	2.0495	2.0488
-27.501	3.69	-18.75	3.50	-1.16	3.51	-1.19	1.467	.0198	.9782	-.0199	.0599	.9886	2.0686	2.0659
-28.000	4.04	-23.76	3.69	-1.63	3.70	-1.67	1.469	.0187	.9788	-.0278	.0632	.9851	2.0718	2.0698

FLOW FIELD DATA FROM V41A-T9A SEPTEMBER 1977 TUNNEL ENRTY AEDC-DR-77-98

GROUP 10 PAGE 5

MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	P0,PSIA	T0,DEG(R)	Q0,PSIA	V0,FT/SEC	PREF,PSIA	CONF(PAR)
1.51	14.482	581.41	3.99	3.888	399.31	6.206	1479.6	-.0012	N3-B2-W-A4-(P3)-1/3

ALPHA(PAR)	ALPHA(RAKE)	V1(IN)	Z1(IN)	Z2(IN)	Z3(IN)	LP
5.00	5.00	-3.50	1.37	2.87	4.37	.01

Y(IN)	PTL1	PTL2	PL3	PL4	PL5	(P/PT)L	(V/V0)L	PTR1	PTR2	PR3	PR4	PR5	(P/PT)R	(V/V0)R
-15.00	12.9130	13.0460	10.8870	0.0000	10.8850	.8387	.3956	13.0200	12.5040	10.6870	10.6630	10.6540	.8359	.3992
-15.50	12.8770	12.9830	10.8170	0.0000	10.8130	.8365	.3985	12.9540	12.4130	10.6270	10.6010	10.5970	.8364	.3986
-16.00	13.0380	13.0770	10.8440	0.0000	10.8380	.8302	.4065	12.9390	12.4270	10.6140	10.5980	10.5840	.8355	.3998
-16.50	13.1850	13.1960	10.9210	0.0000	10.9130	.8277	.4099	13.0180	12.5110	10.6760	10.6520	10.6450	.8350	.4005
-17.01	13.0950	13.1070	10.8470	0.0000	10.8400	.8277	.4098	13.0280	12.4950	10.6790	10.6520	10.6470	.8356	.3997
-17.50	13.0520	13.0550	10.8040	0.0000	10.7960	.8274	.4102	13.0170	12.4900	10.6670	10.6420	10.6370	.8350	.4005
-18.01	13.0680	13.0630	10.8340	0.0000	10.8250	.8289	.4083	13.0850	12.5340	10.6970	10.6720	10.6650	.8336	.4023
-18.50	13.0910	13.1050	10.8250	0.0000	10.8170	.8262	.4117	12.9680	12.4470	10.6240	10.6000	10.5930	.8346	.4009
-19.00	13.0080	13.0700	10.8080	0.0000	10.8000	.8261	.4119	12.9850	12.4260	10.6260	10.6010	10.5950	.8349	.4006
-19.50	13.0740	13.0930	10.8220	0.0000	10.8150	.8269	.4109	13.0340	12.4560	10.6570	10.6310	10.6250	.8346	.4009
-20.00	13.1550	13.1360	10.8610	0.0000	10.8520	.8259	.4121	13.0720	12.5070	10.6900	10.6650	10.6590	.8344	.4012
-20.50	13.1090	13.1200	10.8410	0.0000	10.8330	.8263	.4115	13.0250	12.4720	10.6630	10.6380	10.6310	.8349	.4005
-21.00	13.1300	13.1240	10.8690	0.0000	10.8600	.8277	.4099	13.1210	12.5610	10.7330	10.7070	10.7000	.8343	.4013
-21.50	13.1670	13.1330	10.8640	0.0000	10.8590	.8261	.4118	13.0340	12.4800	10.6610	10.6370	10.6290	.8342	.4014
-22.00	13.1050	13.1110	10.8420	0.0000	10.8330	.8260	.4110	12.9530	12.4250	10.6150	10.5910	10.5850	.8351	.4002
-22.50	13.1380	13.1210	10.8470	0.0000	10.8380	.8258	.4122	13.0060	12.4540	10.6470	10.6220	10.6150	.8349	.4005
-23.00	13.1940	13.1630	10.8840	0.0000	10.8740	.8255	.4126	12.9940	12.4560	10.6420	10.6170	10.6100	.8348	.4007
-23.50	13.2400	13.2190	10.9210	0.0000	10.9130	.8252	.4130	13.0900	12.5460	10.7220	10.6980	10.6890	.8350	.4004
-24.00	13.2350	13.2300	10.9310	0.0000	10.9230	.8258	.4122	13.0900	12.5310	10.7090	10.6840	10.6770	.8345	.4011
-24.50	13.1800	13.1830	10.8870	0.0000	10.8790	.8256	.4124	13.0500	12.5040	10.6870	10.6620	10.6540	.8349	.4005
-26.00	13.1340	13.0990	10.8490	0.0000	10.8400	.8260	.4110	13.0740	12.4920	10.6820	10.6550	10.6490	.8341	.4016
-26.50	13.1110	13.1020	10.8340	0.0000	10.8250	.8263	.4116	13.0230	12.4620	10.6550	10.6290	10.6250	.8347	.4008
-27.00	13.2280	13.2050	10.9190	0.0000	10.9110	.8259	.4122	13.0530	12.5100	10.6820	10.6570	10.6480	.8342	.4014
-27.50	13.1370	13.1160	10.8640	0.0000	10.8550	.8273	.4103	13.1020	12.5340	10.7250	10.7010	10.6940	.8353	.4001
-28.00	13.1310	13.0930	10.8340	0.0000	10.8250	.8260	.4120	13.1110	12.5460	10.7240	10.6960	10.6920	.8344	.4012

APPENDIX D

PRESSURE DISTRIBUTION DATA RETRIEVAL PROGRAMS

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      PROGRAM PDCYL (INPUT,OUTPUT,TAPE1,TAPE6=OUTPUT)                   PDCYL  1
      DIMENSION NUMB(26,5),IPRCON(5),CONF(130)                          PDCYL  2
      DIMENSION NUMS(12,5),ISTCON(5),CONFS(60)                          PDCYL  3
      DIMENSION A(20),B(70,30),C(26,6),D(2,1),E(6)                      PDCYL  4
      INTEGER F(16),G(20)                                               PDCYL  5
      DO 110 I=1,5                                                      PDCYL  6
      DO 110 J=1,12                                                     PDCYL  7
  110 NUMS(J,I)=12                                                      PDCYL  8
      ISTCON(1)=4                                                       PDCYL  9
      ISTCON(2)=1                                                       PDCYL 10
      ISTCON(3)=2                                                       PDCYL 11
      ISTCON(4)=4                                                       PDCYL 12
      ISTCON(5)=11                                                      PDCYL 13
      NUMS(2,1)=5                                                       PDCYL 14
      NUMS(3,1)=3                                                       PDCYL 15
      NUMS(4,1)=4                                                       PDCYL 16
      NUMS(1,2)=4                                                       PDCYL 17
      NUMS(1,3)=1                                                       PDCYL 18
      NUMS(2,3)=2                                                       PDCYL 19
      NUMS(1,4)=1                                                       PDCYL 20
      NUMS(2,4)=3                                                       PDCYL 21
      NUMS(3,4)=5                                                       PDCYL 22
      NUMS(4,4)=2                                                       PDCYL 23
      NUMS(3,5)=1                                                       PDCYL 24
      NUMS(4,5)=2                                                       PDCYL 25
      NUMS(5,5)=5                                                       PDCYL 26
      NUMS(6,5)=6                                                       PDCYL 27
      NUMS(7,5)=7                                                       PDCYL 28
      NUMS(8,5)=8                                                       PDCYL 29
      NUMS(9,5)=9                                                       PDCYL 30
      NUMS(10,5)=10                                                     PDCYL 31
      NUMS(11,5)=11                                                     PDCYL 32
      CONFS(1)=4HSCOC                                                   PDCYL 33
      CONFS(2)=4H PHI                                                   PDCYL 34
      CONFS(3)=4H=45.                                                   PDCYL 35
      CONFS(4)=4H DEG                                                   PDCYL 36
      CONFS(5)=4H.                                                      PDCYL 37
      CONFS(6)=4HSPOC                                                   PDCYL 38
      CONFS(7)=4H PHI                                                   PDCYL 39
      CONFS(8)=4H=0.0                                                   PDCYL 40
      CONFS(9)=4H DEG                                                   PDCYL 41
      CONFS(10)=4H.                                                     PDCYL 42
      CONFS(11)=4HSLFN                                                  PDCYL 43
      CONFS(12)=4H PHI                                                  PDCYL 44
      CONFS(13)=4H=0.0                                                  PDCYL 45
      CONFS(14)=4H DEG                                                  PDCYL 46
      CONFS(15)=4H.                                                     PDCYL 47
      CONFS(16)=4HSLFF                                                  PDCYL 48
      CONFS(17)=4H PHI                                                  PDCYL 49
      CONFS(18)=4H=45.                                                  PDCYL 50
      CONFS(19)=4H DEG                                                  PDCYL 51
      CONFS(20)=4H.                                                     PDCYL 52
      CONFS(21)=4HCIRC                                                  PDCYL 53
      CONFS(22)=4HUL49                                                  PDCYL 54
      CONFS(23)=4H PRE                                                  PDCYL 55
      CONFS(24)=4HSS 3                                                  PDCYL 56
      CONFS(25)=4HTOPF                                                  PDCYL 57
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      CONFS(26)=4HSTDC                                                  PDCYL 58
      CONFS(27)=4H PHI                                                  PDCYL 59
      CONFS(28)=4H=C.0                                                  PDCYL 60
      CONFS(29)=4H DEG                                                  PDCYL 61
      CONFS(30)=4H.                                                     PDCYL 62
      CONFS(31)=4HSTDC                                                  PDCYL 63
      CONFS(32)=4H PHI                                                  PDCYL 64
      CONFS(33)=4H=60.                                                  PDCYL 65
      CONFS(34)=4H DEG                                                  PDCYL 66
      CONFS(35)=4H.                                                     PDCYL 67
      CONFS(36)=4HSE P                                                  PDCYL 68
      CONFS(37)=4HHI=0                                                  PDCYL 69
      CONFS(38)=4H.0 D                                                  PDCYL 70
      CONFS(39)=4HEG.                                                   PDCYL 71
      CONFS(40)=4H                                                      PDCYL 72
      CONFS(41)=4HSEP1                                                  PDCYL 73
      CONFS(42)=4H                                                      PDCYL 74
      CONFS(43)=4H                                                      PDCYL 75
      CONFS(44)=4H                                                      PDCYL 76
      CONFS(45)=4H                                                      PDCYL 77
      CONFS(46)=4HSEP2                                                  PDCYL 78
      CONFS(47)=4H                                                      PDCYL 79
      CONFS(48)=4H                                                      PDCYL 80
      CONFS(49)=4H                                                      PDCYL 81
      CONFS(50)=4H                                                      PDCYL 82
      CONFS(51)=4HSEP2                                                  PDCYL 83
      CONFS(52)=4HNW                                                    PDCYL 84
      CONFS(53)=4H                                                      PDCYL 85
      CONFS(54)=4H                                                      PDCYL 86
      CONFS(55)=4H                                                      PDCYL 87
      CONFS(56)=4HUNKN                                                  PDCYL 88
      CONFS(57)=4HOWN                                                   PDCYL 89
      CONFS(58)=4H                                                      PDCYL 90
      CONFS(59)=4H                                                      PDCYL 91
      CONFS(60)=4H                                                      PDCYL 92
      DO 102 I=1,5                                                      PDCYL 93
      DO 102 J=1,26                                                     PDCYL 94
  102 NUMB(J,I)=0                                                       PDCYL 95
      IPRCON(1)=5                                                       PDCYL 96
      IPRCON(2)=9                                                       PDCYL 97
      IPRCON(3)=15                                                      PDCYL 98
      IPRCON(4)=19                                                      PDCYL 99
      IPRCON(5)=15                                                      PDCYL100
      NUMB(1,1)=1                                                       PDCYL101
      NUMB(2,1)=2                                                       PDCYL102
      NUMB(3,1)=3                                                       PDCYL103
      NUMB(4,1)=4                                                       PDCYL104
      NUMB(5,1)=5                                                       PDCYL105
      NUMB(26,1)=26                                                     PDCYL106
      NUMB(1,2)=1                                                       PDCYL107
      NUMB(2,2)=2                                                       PDCYL108
      NUMB(3,2)=4                                                       PDCYL109
      NUMB(4,2)=6                                                       PDCYL110
      NUMB(5,2)=7                                                       PDCYL111
      NUMB(6,2)=8                                                       PDCYL112
      NUMB(7,2)=3                                                       PDCYL113
      NUMB(8,2)=4                                                       PDCYL114
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      NUMB(9,2)=5                                                       PDCYL115
      NUMB(26,2)=26                                                     PDCYL116
      NUMB(1,3)=1                                                       PDCYL117
      NUMB(2,3)=9                                                       PDCYL118
      NUMB(3,3)=10                                                      PDCYL119
      NUMB(4,3)=11                                                      PDCYL120
      NUMB(5,3)=12                                                      PDCYL121
      NUMB(6,3)=13                                                      PDCYL122
      NUMB(7,3)=2                                                       PDCYL123
      NUMB(8,3)=14                                                      PDCYL124
      NUMB(9,3)=15                                                      PDCYL125
      NUMB(10,3)=16                                                     PDCYL126
      NUMB(11,3)=3                                                      PDCYL127
      NUMB(12,3)=17                                                     PDCYL128
      NUMB(13,3)=7                                                      PDCYL129
      NUMB(14,3)=4                                                      PDCYL130
      NUMB(15,3)=8                                                      PDCYL131
      NUMB(26,3)=26                                                     PDCYL132
      NUMB(1,4)=11                                                      PDCYL133
      NUMB(2,4)=18                                                      PDCYL134
      NUMB(3,4)=19                                                      PDCYL135
      NUMB(4,4)=12                                                      PDCYL136
      NUMB(5,4)=20                                                      PDCYL137
      NUMB(6,4)=21                                                      PDCYL138
      NUMB(7,4)=13                                                      PDCYL139
      NUMB(8,4)=16                                                      PDCYL140
      NUMB(9,4)=15                                                      PDCYL141
      NUMB(10,4)=14                                                     PDCYL142
      NUMB(11,4)=10                                                     PDCYL143
      NUMB(12,4)=9                                                      PDCYL144
      NUMB(13,4)=17                                                     PDCYL145
      NUMB(14,4)=2                                                      PDCYL146
      NUMB(15,4)=3                                                      PDCYL147
      NUMB(16,4)=4                                                      PDCYL148
      NUMB(17,4)=8                                                      PDCYL149
      NUMB(18,4)=7                                                      PDCYL150
      NUMB(19,4)=1                                                      PDCYL151
      NUMB(26,4)=26                                                     PDCYL152
      NUMB(1,5)=1                                                       PDCYL153
      NUMB(2,5)=18                                                      PDCYL154
      NUMB(3,5)=11                                                      PDCYL155
      NUMB(4,5)=23                                                      PDCYL156
      NUMB(5,5)=16                                                      PDCYL157
      NUMB(6,5)=13                                                      PDCYL158
      NUMB(7,5)=24                                                      PDCYL159
      NUMB(8,5)=3                                                       PDCYL160
      NUMB(9,5)=4                                                       PDCYL161
      NUMB(10,5)=2                                                      PDCYL162
      NUMB(11,5)=20                                                     PDCYL163
      NUMB(12,5)=25                                                     PDCYL164
      NUMB(13,5)=19                                                     PDCYL165
      NUMB(14,5)=14                                                     PDCYL166
      NUMB(15,5)=12                                                     PDCYL167
      NUMB(26,5)=26                                                     PDCYL168
      CONF(1)=4H NO                                                     PDCYL169
      CONF(2)=4HPARE                                                    PDCYL170
      CONF(3)=4HNT                                                      PDCYL171
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      CONF(4)=4H                                                      PDCYL172
      CONF(5)=4H                                                      PDCYL173
      CONF(6)=4HN1-B                                                  PDCYL174
      CONF(7)=4H2-W                                                   PDCYL175
      CONF(8)=4H                                                      PDCYL176
      CONF(9)=4H                                                      PDCYL177
      CONF(10)=4H                                                     PDCYL178
      CONF(11)=4HN1-B                                                 PDCYL179
      CONF(12)=4H2-W-                                                 PDCYL180
      CONF(13)=4H(P2)                                                 PDCYL181
      CONF(14)=4HC                                                    PDCYL182
      CONF(15)=4H                                                     PDCYL183
      CONF(16)=4HN1-B                                                 PDCYL184
      CONF(17)=4H2-W-                                                 PDCYL185
      CONF(18)=4H(P2)                                                 PDCYL186
      CONF(19)=4H1/3                                                  PDCYL187
      CONF(20)=4H                                                     PDCYL188
      CONF(21)=4HN1-B                                                 PDCYL189
      CONF(22)=4H2-W-                                                 PDCYL190
      CONF(23)=4H(P2)                                                 PDCYL191
      CONF(24)=4H2/3                                                  PDCYL192
      CONF(25)=4H                                                     PDCYL193
      CONF(26)=4HN1-B                                                 PDCYL194
      CONF(27)=4H2-W-                                                 PDCYL195
      CONF(28)=4H(P2)                                                 PDCYL196
      CONF(29)=4H1/3-                                                 PDCYL197
      CONF(30)=4HS                                                    PDCYL198
      CONF(31)=4HN1-B                                                 PDCYL199
      CONF(32)=4H2-W-                                                 PDCYL200
      CONF(33)=4H(P2)                                                 PDCYL201
      CONF(34)=4H1/3T                                                 PDCYL202
      CONF(35)=4HS2S3                                                 PDCYL203
      CONF(36)=4HN1-B                                                 PDCYL204
      CONF(37)=4H2-W-                                                 PDCYL205
      CONF(38)=4H(P2)                                                 PDCYL206
      CONF(39)=4H1/3-                                                 PDCYL207
      CONF(40)=4HT                                                    PDCYL208
      CONF(41)=4HN1-B                                                 PDCYL209
      CONF(42)=4H1                                                    PDCYL210
      CONF(43)=4H                                                     PDCYL211
      CONF(44)=4H                                                     PDCYL212
      CONF(45)=4H                                                     PDCYL213
      CONF(46)=4HN3-B                                                 PDCYL214
      CONF(47)=4H1-A3                                                 PDCYL215
      CONF(48)=4H                                                     PDCYL216
      CONF(49)=4H                                                     PDCYL217
      CONF(50)=4H                                                     PDCYL218
      CONF(51)=4HN3-B                                                 PDCYL219
      CONF(52)=4H2-W-                                                 PDCYL220
      CONF(53)=4HA4                                                   PDCYL221
      CONF(54)=4H                                                     PDCYL222
      CONF(55)=4H                                                     PDCYL223
      CONF(56)=4HN3-B                                                 PDCYL224
      CONF(57)=4H2-W-                                                 PDCYL225
      CONF(58)=4HA5                                                   PDCYL226
      CONF(59)=4H                                                     PDCYL227
      CONF(60)=4H                                                     PDCYL228
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      CONF(61)=4HN3-B                                             PDCYL229
      CONF(62)=4H2-W-                                             PDCYL230
      CONF(63)=4HA3                                               PDCYL231
      CONF(64)=4H                                                 PDCYL232
      CONF(65)=4H                                                 PDCYL233
      CONF(66)=4HN1-B                                             PDCYL234
      CONF(67)=4H2-W-                                             PDCYL235
      CONF(68)=4HP3-1                                             PDCYL236
      CONF(69)=4H/3                                               PDCYL237
      CONF(70)=4H                                                 PDCYL238
      CONF(71)=4HN3-B                                             PDCYL239
      CONF(72)=4H2-W-                                             PDCYL240
      CONF(73)=4HA3-P                                             PDCYL241
      CONF(74)=4H3-1/                                             PDCYL242
      CONF(75)=4H3                                                PDCYL243
      CONF(76)=4HN3-B                                             PDCYL244
      CONF(77)=4H2-W-                                             PDCYL245
      CONF(78)=4HA3-(                                             PDCYL246
      CONF(79)=4HP2)-                                             PDCYL247
      CONF(80)=4HC                                                PDCYL248
      CONF(81)=4HN1-B                                             PDCYL249
      CONF(82)=4H2-W-                                             PDCYL250
      CONF(83)=4H(P3)                                             PDCYL251
      CONF(84)=4H- 2/                                             PDCYL252
      CONF(85)=4H3                                                PDCYL253
      CONF(86)=4HN3-B                                             PDCYL254
      CONF(87)=4H2-W-                                             PDCYL255
      CONF(88)=4HA4-(                                             PDCYL256
      CONF(89)=4HP2)-                                             PDCYL257
      CONF(90)=4HC                                                PDCYL258
      CONF(91)=4HN3-B                                             PDCYL259
      CONF(92)=4H2-W-                                             PDCYL260
      CONF(93)=4HA4-(                                             PDCYL261
      CONF(94)=4HP3)-                                             PDCYL262
      CONF(95)=4H1/3                                              PDCYL263
      CONF(96)=4HN3-B                                             PDCYL264
      CONF(97)=4H2-W-                                             PDCYL265
      CONF(98)=4HA5-(                                             PDCYL266
      CONF(99)=4HP2)-                                             PDCYL267
      CONF(100)=4HC                                               PDCYL268
      CONF(101)=4HN3-B                                            PDCYL269
      CONF(102)=4H2-W-                                            PDCYL270
      CONF(103)=4HA5-(                                            PDCYL271
      CONF(104)=4HP3)-                                            PDCYL272
      CONF(105)=4H1/3                                             PDCYL273
      CONF(106)=4H                                                PDCYL274
      CONF(107)=4H                                                PDCYL275
      CONF(108)=4H                                                PDCYL276
      CONF(109)=4H                                                PDCYL277
      CONF(110)=4H                                                PDCYL278
      CONF(111)=4HN3-B                                            PDCYL279
      CONF(112)=4H2-W-                                            PDCYL280
      CONF(113)=4HA4-F                                            PDCYL281
      CONF(114)=4H                                                PDCYL282
      CONF(115)=4H                                                PDCYL283
      CONF(116)=4HN3-B                                            PDCYL284
      CONF(117)=4H2-W-                                            PDCYL285
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      CONF(118)=4HA3-F                                                  PDCYL286
      CONF(119)=4H                                                      PDCYL287
      CONF(120)=4H                                                      PDCYL288
      CONF(121)=4HN3-B                                                  PDCYL289
      CONF(122)=4H2-W-                                                  PDCYL290
      CONF(123)=4HA5-F                                                  PDCYL291
      CONF(124)=4H                                                      PDCYL292
      CONF(125)=4H                                                      PDCYL293
      CONF(126)=4HUNKN                                                  PDCYL294
      CONF(127)=4HOWN                                                   PDCYL295
      CONF(128)=4H                                                      PDCYL296
      CONF(129)=4H                                                      PDCYL297
      CONF(130)=4H                                                      PDCYL298
      ICOUNT=0                                                          PDCYL299
      READ 29,INUP,IENTRY                                               PDCYL300
      READ 29,(F(I),I=1,INUM)                                           PDCYL301
      READ(1,32) (G(I),I=1,20)                                          PDCYL302
      E(1)=4HX/L                                                        PDCYL303
      E(2)=4HLCN                                                        PDCYL304
      E(3)=4HLCLM                                                       PDCYL305
      E(4)=4HLCY                                                        PDCYL306
      E(5)=4HLCLN                                                       PDCYL307
      E(6)=4HLCA                                                        PDCYL308
   24 READ(1,1) (A(I),I=1,20)                                           PDCYL309
      IF(EOF(1)) 2,3                                                    PDCYL310
    3 M=A(1)                                                            PDCYL311
      IF(A(19).LT.0.25.OR.A(19).GT.3.53) A(19)=999999999.               PDCYL312
      IF(A(19).GT.0.25.AND.A(19).LT.1.50) A(19)=0.81                    PDCYL313
      IF(A(19).GT.1.50.AND.A(19).LT.2.50) A(19)=1.63                    PDCYL314
      IF(A(19).GT.2.50.AND.A(19).LT.3.50) A(19)=3.25                    PDCYL315
      IDX=26                                                            PDCYL316
      ICONFG=A(17)                                                      PDCYL317
      IL=IPRCON(IENTRY)                                                 PDCYL318
      DO 101 I=1,IL                                                     PDCYL319
      IF(ICONFG.EQ.I) IDX=I                                             PDCYL320
  101 CONTINUE                                                          PDCYL321
      IDXX=NUMA(IDX,IENTRY)                                             PDCYL322
      IDXX=(5*IDXX+1)-5                                                 PDCYL323
      IDYS=21                                                           PDCYL324
      DO 25 I=1,M                                                       PDCYL325
   25 READ(1,1) (B(I,J),J=1,20)                                         PDCYL326
      DO 26 I=1,20                                                      PDCYL327
   26 READ(1,27) (C(I,J),J=1,6)                                         PDCYL328
      READ(1,29) (D(I),I=1,12)                                          PDCYL329
      IGROUP=A(2)                                                       PDCYL330
      DO 30 I=1,INUM                                                    PDCYL331
      IF(IGROUP.EQ.F(I)) GO TO 31                                       PDCYL332
   30 CONTINUE                                                          PDCYL333
      GO TO 24                                                          PDCYL334
   31 WRITE(6,33) (G(I),I=1,20)                                         PDCYL335
      ICOUNT=ICOUNT+1                                                   PDCYL336
      IPAGE=1                                                           PDCYL337
      WRITE(6,4) IGROUP,IPAGE                                           PDCYL338
      IPAGE=IPAGE+1                                                     PDCYL339
      WRITE(6,7)                                                        PDCYL340
      WRITE(6,8)          (A(I),I=3,11)                                 PDCYL341
      WRITE(6,9)                                                        PDCYL342
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      INIDXX=IDXX+4                                                      PDCYL343
      INIDXS=IDXS+4                                                      PDCYL344
      WRITE(6,10) (CONF(I),I=IDXX,INIDXX),(CONFS(I),I=IDXS,INIDXS)      PDCYL345
      WRITE(6,5)                                                         PDCYL346
      WRITE(6,6) (A(I),I=12,16),A(19)                                    PDCYL347
      WRITE(6,11)                                                        PDCYL348
      DO 14 I=1,M                                                        PDCYL349
   14 WRITE(6,12) (B(I,J),J=1,11)                                        PDCYL350
      WRITE(6,34) (C(J,1),J=1,10)                                        PDCYL351
      WRITE(6,33) (G(I),I=1,20)                                          PDCYL352
      WRITE(6,4) IGROUP,IPAGE                                            PDCYL353
      IPAGE=IPAGE+1                                                      PDCYL354
      WRITE(6,7)                                                         PDCYL355
      WRITE(6,8)          (A(I),I=3,11)                                  PDCYL356
      WRITE(6,9)                                                         PDCYL357
      WRITE(6,10) (CONF(I),I=IDXX,INIDXX),(CONFS(I),I=IDXS,INIDXS)      PDCYL358
      WRITE(6,5)                                                         PDCYL359
      WRITE(6,6) (A(I),I=12,16),A(19)                                    PDCYL360
      WRITE(6,16)                                                        PDCYL361
      DO 15 I=1,M                                                        PDCYL362
   15 WRITE(6,12) B(I,1),(B(I,J),J=12,20)                                PDCYL363
      WRITE(6,34) (C(J,1),J=11,19)                                       PDCYL364
      WRITE(6,33) (G(I),I=1,20)                                          PDCYL365
      WRITE(6,4) IGROUP,IPAGE                                            PDCYL366
      WRITE(6,7)                                                         PDCYL367
      WRITE(6,8)          (A(I),I=3,11)                                  PDCYL368
      WRITE(6,9)                                                         PDCYL369
      WRITE(6,10) (CONF(I),I=IDXX,INIDXX),(CONFS(I),I=IDXS,INIDXS)      PDCYL370
      WRITE(6,5)                                                         PDCYL371
      WRITE(6,6) (A(I),I=12,16),A(19)                                    PDCYL372
      WRITE(6,19)                                                        PDCYL373
      WRITE(6,20) E(1),(C(J,1),J=1,10)                                   PDCYL374
      DO 18 I=2,6                                                        PDCYL375
   18 WRITE(6,17) E(I),(C(J,I),J=1,10)                                   PDCYL376
      WRITE(6,19)                                                        PDCYL377
      WRITE(6,20) E(1),(C(J,1),J=11,20)                                  PDCYL378
      DO 21 I=2,6                                                        PDCYL379
   21 WRITE(6,17) E(I),(C(J,I),J=11,20)                                  PDCYL380
      WRITE(6,22) (D(I),I=1,6)                                           PDCYL381
      WRITE(6,23) (D(I),I=7,12)                                          PDCYL382
      IF(ICOUNT.EQ.INUM) GO TO 2                                         PDCYL383
      GO TO 24                                                           PDCYL384
    2 STOP                                                               PDCYL385
    1 FORMAT(10E12.4)                                                    PDCYL386
    4 FORMAT(/,1X,5HGROUP,I5,2X,4HPAGE,I3)                               PDCYL387
  5   FORMAT(/,2X,10HALPHA(PAR),2X,12HALPHA(STORE),1X,6HDX(IN),          PDCYL388
     12X,6HDY(IN),3X,6HDZ(IN)         ,6X,2HLP)                          PDCYL389
  6   FORMAT(3X,F6.2,F13.2,F10.2,F8.2,F9.2,4X,F5.2)                      PDCYL390
  7   FORMAT(/,2X,              4HMACH,2X,7HPO,PSIA,2X,                  PDCYL391
     19HTO,DEG(R),2X,11HRE/FT*10**6,2X,7HPA,PSIA,2X,                     PDCYL392
     29HTB,DEG(R),2X,7HQB,PSIA,2X,9HVB,FT/SEC,2X,                        PDCYL393
     39HPREF,PSIA)                                                       PDCYL394
  8   FORMAT(1X    ,F5.2,F9.3,F10.2,F11.2,F11.3,F11.2,F10.3,             PDCYL395
     1F10.1,F11.4)                                                       PDCYL396
    9 FORMAT(/,6X,9HCONF(PAR),13X,9HCONF(CTS))                           PDCYL397
   10 FORMAT(1X,5A4,2X,5A4)                                              PDCYL398
   11 FORMAT(//,4X,3HPHI,5X,5HP1/PA,7X,5HP2/PA,7X,5HP3/PA,               PDCYL399
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      A3X,5HP4/P8,3X,5HP5/P8,3X,5HP6/P8,3X,5HP7/P8,3X,5HP8/P8,3X,      PDCYL400
     B5HP9/P8,2X,6HP10/P8)                                              PDCYL401
   12 FORMAT(1X,11F8.3)                                                 PDCYL402
   17 FORMAT(/,5X,A10,10(1PE10.3,1X))                                   PDCYL403
   19 FORMAT(//////)                                                    PDCYL404
   20 FORMAT(5X,A4,6X,F7.4,9F11.4)                                      PDCYL405
   16 FORMAT(//,4X,3HPHI,4X,6HP11/P8,2X,6HP12/P8,2X,6HP13/P8,2X,        PDCYL406
     A6HP14/P8,2X,6HP15/P8,2X,6HP16/P8,2X,6HP17/P8,2X,6HP18/P8,        PDCYL407
     B2X,6HP19/P8)                                                      PDCYL408
   22 FORMAT(////,9X,2HCN,9X,3HCMN,8X,3HCMA,8X,3HCLM,7X,5HCM/CN,       PDCYL409
     A7X,3HCA1,/,5X,6(1PE11.3))                                         PDCYL410
   23 FORMAT(/,9X,2HCY,9X,4HCLNY,7X,4HCLNN,7X,3HCLN,7X,6HCLN/CY,       PDCYL411
     A6X,3HCA2,/,5X,6(1PE11.3))                                         PDCYL412
   27 FORMAT(6F12.4)                                                    PDCYL413
   28 FORMAT(12E12.4)                                                   PDCYL414
   29 FORMAT(16I5)                                                      PDCYL415
   32 FORMAT(20A4)                                                      PDCYL416
   33 FORMAT(1H1,1X,20A4)                                               PDCYL417
   34 FORMAT(/,4X,3HX/L,F10.3,9F8.3)                                    PDCYL418
      END                                                               PDCYL419
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PRESSURE DISTRIBUTION DATA FROM V41A-T9A SEPTEMBER 1977 ENRTY AEDC-DR-77-98

GROUP 152 PAGE 1

MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	P8,PSIA	T8,DEG(R)	Q8,PSIA	V8,FT/SEC	PREF,PSIA
1.51	14.637	578.50	4.06	3.930	397.31	6.272	1475.9	.1615

CONF(PAR)	CONF(CTS)
NO PARENT	CIRCULAR PRESS STORE

ALPHA(PAR)	ALPHA(STORE)	DX(IN)	DY(IN)	DZ(IN)	LP
5.00	.00	18.00	.01	.00	*****

PHI	P1/P8	P2/P8	P3/P8	P4/P8	P5/P8	P6/P8	P7/P8	P8/P8	P9/P8	P10/P8
-179.980	3.450	1.665	1.329	1.073	.852	.850	.903	.939	.963	.984
-169.980	3.449	1.665	1.329	1.072	.851	.849	.903	.938	.962	.984
-159.980	3.450	1.664	1.329	1.071	.851	.848	.902	.938	.961	.984
-149.980	3.459	1.668	1.333	1.074	.853	.850	.904	.940	.964	.989
-139.970	3.462	1.670	1.335	1.075	.855	.852	.908	.943	.967	.993
-129.970	3.443	1.663	1.330	1.070	.851	.849	.903	.940	.964	.989
-119.970	3.449	1.659	1.327	1.068	.848	.844	.898	.934	.957	.982
-110.000	3.446	1.661	1.328	1.068	.848	.843	.898	.934	.957	.981
-100.100	3.469	1.667	1.333	1.072	.850	.846	.901	.937	.960	.984
-89.991	3.446	1.662	1.330	1.070	.849	.844	.898	.933	.957	.981
-80.019	3.458	1.669	1.334	1.072	.851	.845	.899	.934	.958	.983
-70.021	3.443	1.660	1.328	1.068	.847	.842	.895	.931	.953	.978
-60.014	3.444	1.665	1.331	1.071	.849	.844	.896	.932	.954	.979
-49.995	3.453	1.668	1.332	1.072	.850	.844	.896	.931	.954	.978
-40.001	3.449	1.668	1.332	1.073	.850	.845	.895	.931	.953	.977
-30.015	3.451	1.669	1.331	1.073	.850	.845	.895	.930	.953	.974
-20.005	3.450	1.671	1.332	1.075	.851	.846	.896	.930	.953	.973
-10.006	3.456	1.672	1.333	1.076	.851	.847	.897	.930	.952	.972
-.038	3.457	1.675	1.335	1.078	.853	.848	.898	.931	.954	.974
9.951	3.444	1.668	1.331	1.075	.852	.846	.896	.929	.951	.972
19.940	3.447	1.669	1.331	1.075	.851	.846	.895	.928	.951	.972
29.934	3.435	1.664	1.327	1.071	.849	.843	.893	.925	.948	.969
39.951	3.443	1.666	1.329	1.073	.850	.845	.894	.928	.950	.971
49.971	3.447	1.668	1.330	1.073	.851	.846	.895	.929	.952	.972
59.927	3.450	1.671	1.333	1.076	.853	.848	.898	.932	.955	.975
69.938	3.445	1.668	1.330	1.074	.851	.846	.896	.930	.954	.974
79.949	3.435	1.661	1.325	1.069	.848	.844	.894	.927	.951	.970
89.935	3.446	1.666	1.329	1.073	.850	.846	.897	.930	.955	.974
99.945	3.452	1.668	1.333	1.073	.851	.847	.897	.931	.956	.976
109.930	3.449	1.668	1.331	1.076	.852	.849	.899	.935	.958	.979
119.890	3.459	1.669	1.331	1.075	.852	.848	.900	.934	.959	.979
129.920	3.449	1.661	1.324	1.072	.849	.845	.897	.932	.956	.976
139.930	3.435	1.658	1.322	1.071	.847	.844	.896	.931	.955	.975
149.980	3.424	1.653	1.318	1.070	.845	.843	.894	.930	.953	.973
159.900	3.438	1.659	1.323	1.074	.848	.846	.898	.933	.957	.977
169.930	3.443	1.660	1.324	1.071	.848	.846	.898	.933	.958	.978
179.890	3.438	1.656	1.322	1.073	.847	.845	.898	.933	.957	.977
X/L	0.000	.052	.104	.156	.209	.261	.314	.366	.419	.471

PRESSURE DISTRIBUTION DATA FROM V41A-T9A SEPTEMBER 1977 ENRTY AEDC-DR-77-98

GROUP 152 PAGE 2

MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	PA,PSIA	TA,DEG(R)	QA,PSIA	VA,FT/SEC	PREF,PSIA
1.51	14.637	578.50	4.06	3.930	397.31	6.272	1475.9	.1615

CONF(PAR)	CONF(CTS)
NO PARENT	CIRCULAR PRESS STORE

ALPHA(PAR)	ALPHA(STORE)	DX(IN)	DY(IN)	DZ(IN)	LP
5.00	.00	18.00	.01	.00	*****

PHI	P11/P8	P12/P8	P13/P8	P14/P8	P15/P8	P16/P8	P17/P8	P18/P8	P19/P8
-179.980	.998	1.000	1.002	1.004	1.009	1.002	1.013	1.014	1.006
-169.980	.996	.997	.999	1.001	1.006	1.000	1.011	1.013	1.003
-159.980	.995	.996	.999	1.001	1.005	1.000	1.011	1.012	1.003
-149.980	.996	.998	1.002	1.004	1.008	1.003	1.013	1.014	1.005
-139.970	1.001	1.003	1.007	1.009	1.015	1.007	1.018	1.020	1.011
-129.978	.996	.998	1.003	1.006	1.011	1.004	1.014	1.016	1.007
-119.970	.990	.992	.995	.999	1.004	.998	1.007	1.010	1.001
-110.000	.989	.992	.995	.999	1.005	.998	1.007	1.010	1.001
-100.000	.993	.996	.999	1.004	1.009	1.002	1.011	1.014	1.005
-89.991	.989	.993	.996	1.000	1.006	1.000	1.008	1.011	1.003
-80.019	.990	.995	.999	1.002	1.008	1.002	1.010	1.013	1.005
-70.021	.986	.991	.996	.998	1.005	.999	1.007	1.009	1.001
-60.014	.987	.992	.997	1.000	1.006	1.000	1.008	1.011	1.002
-49.995	.988	.993	.997	1.000	1.007	1.000	1.009	1.011	1.003
-40.001	.989	.993	.998	1.001	1.007	1.002	1.009	1.012	1.003
-30.015	.990	.993	.998	1.001	1.007	1.002	1.010	1.012	1.003
-20.005	.989	.994	.998	1.001	1.007	1.002	1.010	1.013	1.003
-10.006	.991	.996	.999	1.003	1.008	1.002	1.011	1.013	1.003
-.038	.991	.998	1.001	1.004	1.009	1.003	1.012	1.015	1.005
9.951	.987	.995	.998	1.001	1.007	1.002	1.009	1.012	1.003
19.940	.985	.995	.998	1.001	1.006	1.000	1.008	1.012	1.001
29.934	.982	.992	.995	.997	1.004	.996	1.005	1.009	.998
39.951	.984	.993	.998	.999	1.005	.999	1.007	1.010	1.000
49.971	.985	.994	.999	1.001	1.006	.999	1.008	1.011	1.001
59.927	.998	.996	1.001	1.004	1.008	1.003	1.010	1.013	1.004
69.938	.987	.994	.999	1.001	1.005	.999	1.008	1.012	1.001
79.949	.984	.991	.996	.998	1.002	.995	1.004	1.008	.998
89.935	.988	.995	.999	1.001	1.005	.998	1.007	1.012	1.001
99.945	.989	.995	1.000	1.001	1.005	.998	1.008	1.013	1.001
109.930	.991	.998	1.001	1.002	1.006	1.000	1.009	1.014	1.002
119.890	.992	.999	1.002	1.002	1.007	.999	1.009	1.014	1.002
129.920	.989	.996	.997	.998	1.003	.996	1.006	1.010	.998
139.930	.988	.995	.996	.996	1.001	.994	1.004	1.009	.997
149.900	.986	.992	.992	.993	.998	.992	1.002	1.006	.994
159.900	.991	.996	.996	.998	1.001	.996	1.006	1.009	.998
169.930	.993	.995	.996	.997	1.002	.995	1.007	1.009	.997
179.890	.991	.993	.995	.996	1.000	.995	1.006	1.008	.996
X/L	.523	.575	.628	.680	.733	.785	.837	.889	.942

PRESSURE DISTRIBUTION DATA FROM V41A-T9A SEPTEMBER 1977 ENTRY AEDC-DR-77-98

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MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	PA,PSIA	TA,DEG(R)	QA,PSIA	VA,FT/SEC	PREF,PSIA
1.51	14.637	578.50	4.06	3.930	397.31	6.272	1475.9	.1615

CONF(PAR)	CONF(CTS)
NO PARENT	CIRCULAR PRESS STORE

ALPHA(PAR)	ALPHA(STORE)	DX(IN)	DY(IN)	DZ(IN)	LP
5.00	.00	19.00	.01	.00	*****

X/L	0.0000	.0522	.1041	.1564	.2088	.2613	.3139	.3664	.4185	.4707
LCN	0.	-3.501E-03	-4.286E-03	-2.967E-03	-2.100E-03	3.441E-04	3.452E-03	5.208E-03	6.467E-03	6.912E-03
LCLM	0.	-1.333E-02	-1.442E-02	-8.667E-03	-5.200E-03	6.982E-04	5.463E-03	5.916E-03	4.484E-03	1.723E-03
LCY	0.	4.808E-06	2.091E-03	-1.991E-03	-2.743E-04	-5.740E-04	2.481E-03	4.004E-03	3.398E-03	7.784E-03
LCLN	0.	1.830E-05	7.038E-03	-5.816E-03	-6.792E-04	-1.165E-03	3.927E-03	4.549E-03	2.356E-03	1.941E-03
LCA	0.	3.593E-01	2.099E-01	3.444E-02	-2.611E-02	0.	0.	0.	0.	0.

X/L	.5230	.5749	.6278	.6802	.7325	.7849	.8369	.8894	.9418	1.0000
LCN	4.515E-03	1.088E-03	-8.819E-04	-2.004E-03	-3.147E-03	-3.361E-03	-1.293E-03	-1.422E-03	-2.155E-03	-2.970E-03
LCLM	-9.790E-04	-6.921E-04	9.571E-04	3.067E-03	6.218E-03	8.138E-03	3.702E-03	4.707E-03	8.090E-03	1.262E-02
LCY	3.335E-03	-6.392E-04	1.373E-04	1.645E-03	2.713E-03	3.441E-03	2.942E-03	1.291E-03	3.657E-03	6.291E-03
LCLN	-6.497E-04	4.065E-04	-1.491E-04	-2.518E-03	-5.361E-03	-8.332E-03	-8.423E-03	-4.272E-03	-1.373E-02	-2.674E-02
LCA	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

CN	CMN	CMA	CLM	CM/CN	CA1
-3.049E-04	5.673E-03	3.198E-04	5.992E-03	-1.860E+01	2.006E-01

CY	CLNY	CLNN	CLN	CLN/CY	CA2
1.299E-02	-1.474E-02	-2.137E-05	-1.476E-02	-1.135E+00	1.995E-01

```
      PROGRAM PDE    (INPUT,OUTPUT,TAPE1,TAPE6=OUTPUT)
      DIMENSION NUMB(25,5),IPRCON(5),CONF(130)
      DIMENSION NUMS(12,5),ISTCON(5),CONFS(60)
      DIMENSION A(154),F(6)
      INTEGER E(16),G(20)
      DO 110 I=1,5
      DO 110 J=1,12
  110 NUMS(J,I)=12
      ISTCON(1)=4
      ISTCON(2)=1
      ISTCON(3)=2
      ISTCON(4)=4
      ISTCON(5)=11
      NUMS(2,1)=5
      NUMS(3,1)=3
      NUMS(4,1)=4
      NUMS(1,2)=4
      NUMS(1,3)=1
      NUMS(2,3)=2
      NUMS(1,4)=1
      NUMS(2,4)=3
      NUMS(3,4)=5
      NUMS(4,4)=2
      NUMS(3,5)=1
      NUMS(4,5)=2
      NUMS(5,5)=3
      NUMS(6,5)=6
      NUMS(7,5)=7
      NUMS(8,5)=8
      NUMS(9,5)=9
      NUMS(10,5)=10
      NUMS(11,5)=11
      CONFS(1)=4HSCOC
      CONFS(2)=4H PHI
      CONFS(3)=4H=45.
      CONFS(4)=4H DEG
      CONFS(5)=4H.
      CONFS(6)=4HSPOC
      CONFS(7)=4H PHI
      CONFS(8)=4H=0.0
      CONFS(9)=4H DEG
      CONFS(10)=4H.
      CONFS(11)=4HSLFN
      CONFS(12)=4H PHI
      CONFS(13)=4H=0.0
      CONFS(14)=4H DEG
      CONFS(15)=4H.
      CONFS(16)=4HSLFF
      CONFS(17)=4H PHI
      CONFS(18)=4H=45.
      CONFS(19)=4H DEG
      CONFS(20)=4H.
      CONFS(21)=4HCIRC
      CONFS(22)=4HULAR
      CONFS(23)=4H PRE
      CONFS(24)=4HSS S
      CONFS(25)=4HTORE
```

```
      CONFS(26)=4HSTOC                                PDE  58
      CONFS(27)=4H PHI                                PDE  59
      CONFS(28)=4H=0.0                                PDE  60
      CONFS(29)=4H DEG                                PDE  61
      CONFS(30)=4H.                                   PDE  62
      CONFS(31)=4HSTOC                                PDE  63
      CONFS(32)=4H PHI                                PDE  64
      CONFS(33)=4H=60.                                PDE  65
      CONFS(34)=4H DEG                                PDE  66
      CONFS(35)=4H.                                   PDE  67
      CONFS(36)=4HSF P                                PDE  68
      CONFS(37)=4HMI=0                                PDE  69
      CONFS(38)=4H.P D                                PDE  70
      CONFS(39)=4HEG.                                 PDE  71
      CONFS(40)=4H                                    PDE  72
      CONFS(41)=4HSEP1                                PDE  73
      CONFS(42)=4H                                    PDE  74
      CONFS(43)=4H                                    PDE  75
      CONFS(44)=4H                                    PDE  76
      CONFS(45)=4H                                    PDE  77
      CONFS(46)=4HSEP2                                PDE  78
      CONFS(47)=4H                                    PDE  79
      CONFS(48)=4H                                    PDE  80
      CONFS(49)=4H                                    PDE  81
      CONFS(50)=4H                                    PDE  82
      CONFS(51)=4HSEP2                                PDE  83
      CONFS(52)=4HW                                   PDE  84
      CONFS(53)=4H                                    PDE  85
      CONFS(54)=4H                                    PDE  86
      CONFS(55)=4H                                    PDE  87
      CONFS(56)=4HUNKN                                PDE  88
      CONFS(57)=4HOWN                                 PDE  89
      CONFS(58)=4H                                    PDE  90
      CONFS(59)=4H                                    PDE  91
      CONFS(60)=4H                                    PDE  92
      DO 102 I=1,5                                    PDE  93
      DO 102 J=1,26                                   PDE  94
  102 NUMB(J,I)=0                                     PDE  95
      IPPCON(1)=5                                     PDE  96
      IPPCON(2)=9                                     PDE  97
      IPPCON(3)=15                                    PDE  98
      IPPCON(4)=19                                    PDE  99
      IPPCON(5)=15                                    PDE 100
      NUMB(1,1)=1                                     PDE 101
      NUMB(2,1)=2                                     PDE 102
      NUMB(3,1)=3                                     PDE 103
      NUMB(4,1)=4                                     PDE 104
      NUMB(5,1)=5                                     PDE 105
      NUMB(26,1)=26                                   PDE 106
      NUMB(1,2)=1                                     PDE 107
      NUMB(2,2)=2                                     PDE 108
      NUMB(3,2)=4                                     PDE 109
      NUMB(4,2)=6                                     PDE 110
      NUMB(5,2)=7                                     PDE 111
      NUMB(6,2)=8                                     PDE 112
      NUMB(7,2)=3                                     PDE 113
      NUMB(8,2)=4                                     PDE 114
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      NUMB(9,2)=5                                        PDE  115
      NUMB(26,2)=26                                      PDE  116
      NUMB(1,3)=1                                        PDE  117
      NUMB(2,3)=9                                        PDE  118
      NUMB(3,3)=10                                       PDE  119
      NUMB(4,3)=11                                       PDE  120
      NUMB(5,3)=12                                       PDE  121
      NUMB(6,3)=13                                       PDE  122
      NUMB(7,3)=2                                        PDE  123
      NUMB(8,3)=14                                       PDE  124
      NUMB(9,3)=15                                       PDE  125
      NUMB(10,3)=16                                      PDE  126
      NUMB(11,3)=3                                       PDE  127
      NUMB(12,3)=17                                      PDE  128
      NUMB(13,3)=7                                       PDE  129
      NUMB(14,3)=4                                       PDE  130
      NUMB(15,3)=8                                       PDE  131
      NUMB(26,3)=26                                      PDE  132
      NUMB(1,4)=11                                       PDE  133
      NUMB(2,4)=18                                       PDE  134
      NUMB(3,4)=19                                       PDE  135
      NUMB(4,4)=12                                       PDE  136
      NUMB(5,4)=20                                       PDE  137
      NUMB(6,4)=21                                       PDE  138
      NUMB(7,4)=13                                       PDE  139
      NUMB(8,4)=16                                       PDE  140
      NUMB(9,4)=15                                       PDE  141
      NUMB(10,4)=14                                      PDE  142
      NUMB(11,4)=10                                      PDE  143
      NUMB(12,4)=9                                       PDE  144
      NUMB(13,4)=17                                      PDE  145
      NUMB(14,4)=2                                       PDE  146
      NUMB(15,4)=3                                       PDE  147
      NUMB(16,4)=4                                       PDE  148
      NUMB(17,4)=8                                       PDE  149
      NUMB(18,4)=7                                       PDE  150
      NUMB(19,4)=1                                       PDE  151
      NUMB(26,4)=26                                      PDE  152
      NUMB(1,5)=1                                        PDE  153
      NUMB(2,5)=18                                       PDE  154
      NUMB(3,5)=11                                       PDE  155
      NUMB(4,5)=23                                       PDE  156
      NUMB(5,5)=16                                       PDE  157
      NUMB(6,5)=13                                       PDE  158
      NUMB(7,5)=24                                       PDE  159
      NUMB(8,5)=3                                        PDE  160
      NUMB(9,5)=4                                        PDE  161
      NUMB(10,5)=2                                       PDE  162
      NUMB(11,5)=26                                      PDE  163
      NUMB(12,5)=25                                      PDE  164
      NUMB(13,5)=19                                      PDE  165
      NUMB(14,5)=14                                      PDE  166
      NUMB(15,5)=12                                      PDE  167
      NUMB(26,5)=26                                      PDE  168
      CONF(1)=4H NO                                      PDE  169
      CONF(2)=4HPAPE                                     PDE  170
      CONF(3)=4HNT                                       PDE  171
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      CONF(4)=4H                                                    PDE  172
      CONF(5)=4H                                                    PDE  173
      CONF(6)=4HN1-B                                                PDE  174
      CONF(7)=4H2-W                                                 PDE  175
      CONF(8)=4H                                                    PDE  176
      CONF(9)=4H                                                    PDE  177
      CONF(10)=4H                                                   PDE  178
      CONF(11)=4HN1-B                                               PDE  179
      CONF(12)=4H2-W-                                               PDE  180
      CONF(13)=4H(P2)                                               PDE  181
      CONF(14)=4HC                                                  PDE  182
      CONF(15)=4H                                                   PDE  183
      CONF(16)=4HN1-B                                               PDE  184
      CONF(17)=4H2-W-                                               PDE  185
      CONF(18)=4H(P2)                                               PDE  186
      CONF(19)=4H1/3                                                PDE  187
      CONF(20)=4H                                                   PDE  188
      CONF(21)=4HN1-B                                               PDE  189
      CONF(22)=4H2-W-                                               PDE  190
      CONF(23)=4H(P2)                                               PDE  191
      CONF(24)=4H2/3                                                PDE  192
      CONF(25)=4H                                                   PDE  193
      CONF(26)=4HN1-B                                               PDE  194
      CONF(27)=4H2-W-                                               PDE  195
      CONF(28)=4H(P2)                                               PDE  196
      CONF(29)=4H1/3-                                               PDE  197
      CONF(30)=4HS                                                  PDE  198
      CONF(31)=4HN1-B                                               PDE  199
      CONF(32)=4H2-W-                                               PDE  200
      CONF(33)=4H(P2)                                               PDE  201
      CONF(34)=4H1/3T                                               PDE  202
      CONF(35)=4HS2S3                                               PDE  203
      CONF(36)=4HN1-B                                               PDE  204
      CONF(37)=4H2-W-                                               PDE  205
      CONF(38)=4H(P2)                                               PDE  206
      CONF(39)=4H1/3-                                               PDE  207
      CONF(40)=4HT                                                  PDE  208
      CONF(41)=4HN1-B                                               PDE  209
      CONF(42)=4H1                                                  PDE  210
      CONF(43)=4H                                                   PDE  211
      CONF(44)=4H                                                   PDE  212
      CONF(45)=4H                                                   PDE  213
      CONF(46)=4HN3-B                                               PDE  214
      CONF(47)=4H1-A3                                               PDE  215
      CONF(48)=4H                                                   PDE  216
      CONF(49)=4H                                                   PDE  217
      CONF(50)=4H                                                   PDE  218
      CONF(51)=4HN3-B                                               PDE  219
      CONF(52)=4H2-W-                                               PDE  220
      CONF(53)=4HA4                                                 PDE  221
      CONF(54)=4H                                                   PDE  222
      CONF(55)=4H                                                   PDE  223
      CONF(56)=4HN3-B                                               PDE  224
      CONF(57)=4H2-W-                                               PDE  225
      CONF(58)=4HA5                                                 PDE  226
      CONF(59)=4H                                                   PDE  227
      CONF(60)=4H                                                   PDE  228
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      CONF(61)=4HN3-9                                  PDE  229
      CONF(62)=4H2-W-                                  PDE  230
      CONF(63)=4HA3                                    PDE  231
      CONF(64)=4H                                      PDE  232
      CONF(65)=4H                                      PDE  233
      CONF(66)=4HN1-B                                  PDE  234
      CONF(67)=4H2-W-                                  PDE  235
      CONF(68)=4HP3-1                                  PDE  236
      CONF(69)=4H/3                                    PDE  237
      CONF(70)=4H                                      PDE  238
      CONF(71)=4HN3-B                                  PDE  239
      CONF(72)=4H2-W-                                  PDE  240
      CONF(73)=4HA3-P                                  PDE  241
      CONF(74)=4H3-1/                                  PDE  242
      CONF(75)=4H3                                     PDE  243
      CONF(76)=4HN3-B                                  PDE  244
      CONF(77)=4H2-W-                                  PDE  245
      CONF(78)=4HA3-(                                  PDE  246
      CONF(79)=4HP2)-                                  PDE  247
      CONF(80)=4HC                                     PDE  248
      CONF(81)=4HN1-B                                  PDE  249
      CONF(82)=4H2-W-                                  PDE  250
      CONF(83)=4H(P3)                                  PDE  251
      CONF(84)=4H- 2/                                  PDE  252
      CONF(85)=4H3                                     PDE  253
      CONF(86)=4HN3-B                                  PDE  254
      CONF(87)=4H2-W-                                  PDE  255
      CONF(88)=4HA4-(                                  PDE  256
      CONF(89)=4HP2)-                                  PDE  257
      CONF(90)=4HC                                     PDE  258
      CONF(91)=4HN3-B                                  PDE  259
      CONF(92)=4H2-W-                                  PDE  260
      CONF(93)=4HA4-(                                  PDE  261
      CONF(94)=4HP3)-                                  PDE  262
      CONF(95)=4H1/3                                   PDE  263
      CONF(96)=4HN3-9                                  PDE  264
      CONF(97)=4H2-W-                                  PDE  265
      CONF(98)=4HA5-(                                  PDE  266
      CONF(99)=4HP2)-                                  PDE  267
      CONF(100)=4HC                                    PDE  268
      CONF(101)=4HN3-9                                 PDE  269
      CONF(102)=4H2-W-                                 PDE  270
      CONF(103)=4HA5-(                                 PDE  271
      CONF(104)=4HP3)-                                 PDE  272
      CONF(105)=4H1/3                                  PDE  273
      CONF(106)=4H                                     PDE  274
      CONF(107)=4H                                     PDE  275
      CONF(108)=4H                                     PDE  276
      CONF(109)=4H                                     PDE  277
      CONF(110)=4H                                     PDE  278
      CONF(111)=4HN3-9                                 PDE  279
      CONF(112)=4H2-W-                                 PDE  280
      CONF(113)=4HA4-F                                 PDE  281
      CONF(114)=4H                                     PDE  282
      CONF(115)=4H                                     PDE  283
      CONF(116)=4HN3-B                                 PDE  284
      CONF(117)=4H2-W-                                 PDE  285
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      CONF(118)=4H83-F                                        PDE  286
      CONF(119)=4H                                            PDE  287
      CONF(120)=4H                                            PDE  288
      CONF(121)=4HN3-B                                        PDE  289
      CONF(122)=4H2-N-                                        PDE  290
      CONF(123)=4H45-F                                        PDE  291
      CONF(124)=4H                                            PDE  292
      CONF(125)=4H                                            PDE  293
      CONF(126)=4HUNKN                                        PDE  294
      CONF(127)=4HOWN                                         PDE  295
      CONF(128)=4H                                            PDE  296
      CONF(129)=4H                                            PDE  297
      CONF(130)=4H                                            PDE  298
      ICOUNT=0                                                PDE  299
      READ 29,INUM,IENTRY                                     PDE  300
      IENTRY=5                                                PDE  301
      READ 29,(F(I),I=1,INUM)                                 PDE  302
      READ(1,32) (G(I),I=1,20)                                PDE  303
      E(1)=4HX/L                                              PDE  304
      E(2)=4HLCN                                              PDE  305
      F(3)=4HLCLM                                             PDE  306
      E(4)=4HLCY                                              PDE  307
      F(5)=4HLCLM                                             PDE  308
      F(6)=4HLCA                                              PDE  309
   24 READ(1,1) (A(I),I=1,154)                                PDE  310
      IF(EOF(1)) 2,3                                          PDE  311
    3 CONTINUE                                                PDE  312
      IF(A(20).LT.0.25.OR.A(20).GT.3.50) A(20)=999999999.     PDE  313
      IF(A(20).GT.0.25.AND.A(20).LT.1.50) A(20)=0.81          PDE  314
      IF(A(20).GT.1.50.AND.A(20).LT.2.50) A(20)=1.63          PDE  315
      IF(A(20).GT.2.50.AND.A(20).LT.3.50) A(20)=3.25          PDE  316
      IDX=26                                                  PDE  317
      ICONFG=A(19)                                            PDE  318
      IL=IPPCON(IENTRY)                                       PDE  319
      DO 101 I=1,IL                                           PDE  320
      IF(ICONFG.EQ.I) IDX=I                                   PDE  321
  101 CONTINUE                                                PDE  322
      IDXX=NUMS(IDX,IENTRY)                                   PDE  323
      IDXX=(5*IDXX+1)-5                                       PDE  324
      ICONFS=A(18)                                            PDE  325
      IDXS=12                                                 PDE  326
      IL=ISTCON(IENTRY)                                       PDE  327
      DO 112 I=1,IL                                           PDE  328
      IF(ICONFS.EQ.I) IDXS=I                                  PDE  329
  112 CONTINUE                                                PDE  330
      IDXS=NUMS(IDXS,IENTRY)                                  PDE  331
      IDXS=(5*IDXS+1)-5                                       PDE  332
      IGROUP=A(1)                                             PDE  333
      DO 30 I=1,INUM                                          PDE  334
      IF(IGROUP.EQ.F(I)) GO TO 31                             PDE  335
   30 CONTINUE                                                PDE  336
      GO TO 24                                                PDE  337
   31 WRITE(6,33) (G(I),I=1,20)                               PDE  338
      ICOUNT=ICOUNT+1                                         PDE  339
      WRITE(6,4) IGROUP                                       PDE  340
      WRITE(6,7)                                              PDE  341
      WRITE(6,8)         (A(I),I=2,12)                        PDE  342
```

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      WRITE (6,9)                                                   PDE  343
      INIDXX=IDXX+4                                                 PDE  344
      INIDXS=IDXS+4                                                 PDE  345
      WRITE (6,10) (CONF(I),I=IDXX,INIDXX),(CONFS(I),I=IDXS,INIDXS) PDE  346
      WRITE(6,5)                                                    PDE  347
      WRITE(6,6) (A(I),I=13,17),A(20)                               PDE  348
      WRITE(6,11)                                                   PDE  349
      I1=22                                                         PDE  350
      I2=66                                                         PDE  351
      I3=110                                                        PDE  352
      DO 14 I=1,11                                                  PDE  353
      J=A(I1+1)                                                     PDE  354
      K=A(I2+1)                                                     PDE  355
      L=A(I3+1)                                                     PDE  356
      WRITE(6,12) J,(A(I1+J),J=2,4),K,(A(I2+J),J=2,4),L,(A(I3+J),J=2,4) PDE  357
      I1=I1+4                                                       PDE  358
      I2=I2+4                                                       PDE  359
   14 I3=I3+4                                                       PDE  360
      IF(ICOUNT.EQ.INUM) GO TO 2                                    PDE  361
      GO TO 24                                                      PDE  362
    2 STOP                                                          PDE  363
    1 FORMAT(10E12.4)                                               PDE  364
    4 FORMAT(/,1X,5HGROUP,I5)                                       PDE  365
    5 FORMAT(/,2X,10HALPHA(PAR),2X,12HALPHA(STORE),1X,6HDX(IN),     PDE  366
     12X,6HDY(IN),3X,6HDZ(IN),4X,2HLP)                              PDE  367
    6 FORMAT(3X,F6.2,F13.2,F10.2,F8.2,F9.2,3X,F5.2)                 PDE  368
    7 FORMAT(/           ,2X,4HMACH,2X,7HPO,PSIA,2X,                PDE  369
     19HTO,DEG(R),2X,11HRE/FT*10**6,2X,7HP8,PSIA,2X,                PDE  370
     29HT8,DEG(R),2X,7HQ8,PSIA,2X,9HV8,FT/SEC,2X,                   PDE  371
     39HPREF,PSIA,2X,9HYAW,STORE,2X,9HPHI,STORE)                    PDE  372
    8 FORMAT(1X    ,F5.2,F9.3,F10.2,F11.2,F11.3,F11.2,F10.3,        PDE  373
     1F10.1,F11.4,F10.2,F11.2)                                      PDE  374
    9 FORMAT(/,6X,9HCONF(PAR),13X,11HCONF(STORE))                   PDE  375
   10 FORMAT(1X,5A4,9X,5A4)                                         PDE  376
   11 FORMAT(/(3(1X,5HMODEL,3X,3HX/L,5X,1HP,6X,4HP/P8,2X)),/,       PDE  377
     13(2X,3HTAP,10X,6H(PSIA),9X))                                  PDE  378
   12 FORMAT(3(2X,I2,F9.4,2F8.3,1X))                                PDE  379
   29 FORMAT(16I5)                                                  PDE  380
   32 FORMAT(20A4)                                                  PDE  381
   33 FORMAT(1H1,1X,20A4)                                           PDE  382
      END                                                           PDE  383
```

PRESSURE DISTRIBUTION DATA FROM V41A-V6A JAN-FEB 1978 AEDC-TSR-78-V2

GROUP 492

MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	P8,PSIA	T8,DEG(R)	Q8,PSIA	V8,FT/SEC	PREF,PSIA	YAW,STORE	PHI,STORE
1.50	14.590	582.67	4.02	3.974	401.84	6.260	1474.1	.8603	-.02	.09

CONF(PAR)	CONF(STORE)
N3-82-W-A4-(P2)-C	SEP1

ALPHA(PAR)	ALPHA(STORE)	DX(IN)	DY(IN)	DZ(IN)	LP
0.00	.00	.03	-.01	.75	.81

MODEL TAP	X/L	P (PSIA)	P/P8	MODEL TAP	X/L	P (PSIA)	P/P8	MODEL TAP	X/L	P (PSIA)	P/P8
1	0.0000	0.000	0.000	12	.7333	3.693	.929	23	.5333	2.815	.708
2	.0667	7.690	1.935	13	.8000	3.519	.885	24	.6000	3.794	.955
3	.1333	6.342	1.596	14	.8667	3.402	.856	25	.6667	3.498	.880
4	.2000	5.405	1.360	15	.9333	3.289	.827	26	.7333	3.507	.882
5	.2667	4.837	1.217	16	.0667	8.596	2.163	27	.8000	3.321	.836
6	.3333	3.630	.913	17	.1333	6.968	1.753	28	.8667	2.817	.709
7	.4000	3.074	.773	18	.2000	5.813	1.463	29	.9333	2.538	.639
8	.4667	2.989	.752	19	.2667	4.641	1.168	30	.4667	2.854	.718
9	.5333	3.140	.790	20	.3333	4.053	1.020	31	.4667	2.847	.716
10	.6000	3.637	.915	21	.4000	3.125	.786	32	.8667	2.939	.739
11	.6667	3.798	.956	22	.4667	2.864	.721	33	.8667	2.861	.720

PRESSURE DISTRIBUTION DATA FROM V41A-V6A JAN-FEB 1978 AEDC-TSR-78-V2

GROUP 493

MACH	PO,PSIA	TO,DEG(F)	RE/FT*10**6	PB,PSIA	TB,DEG(R)	QB,PSIA	VB,FT/SEC	PREF,PSIA	YAW,STORE	PHI,STORE
1.50	14.598	582.67	4.02	3.976	401.84	6.263	1474.1	.0003	-.01	.08

CONF(PAR)	CONF(STORE)
N3-R2-W-A4-(P2)-C	SEP1

ALPHA(PAR)	ALPHA(STORE)	DX(IN)	DY(IN)	DZ(IN)	LP
0.00	.00	.00	-.01	.10	.81

MODEL TAP	X/L	P (PSIA)	P/PB	MODEL TAP	X/L	P (PSIA)	P/PB	MODEL TAP	X/L	P (PSIA)	P/PB
1	0.0000	0.000	0.000	12	.7333	3.426	.861	23	.5333	3.598	.905
2	.0667	7.703	1.937	13	.8000	3.290	.827	24	.6000	3.152	.793
3	.1333	6.112	1.537	14	.8667	3.184	.801	25	.6667	3.179	.799
4	.2000	4.979	1.252	15	.9333	3.209	.807	26	.7333	2.688	.676
5	.2667	4.380	1.025	16	.0667	8.591	2.160	27	.8000	2.051	.516
6	.3333	3.255	.819	17	.1333	5.943	1.495	28	.8667	2.612	.657
7	.4000	3.001	.755	18	.2000	4.670	1.174	29	.9333	3.649	.918
8	.4667	3.049	.767	19	.2667	4.061	1.021	30	.4667	2.986	.751
9	.5333	3.280	.825	20	.3333	3.688	.927	31	.4667	2.951	.742
10	.6000	3.456	.869	21	.4000	3.201	.805	32	.8667	2.371	.596
11	.6667	3.473	.873	22	.4667	3.216	.809	33	.8667	2.396	.603

```
      PROGRAM PDEI(INPUT,OUTPUT,TAPE1,TAPE6=OUTPUT,TAPE5=INPUT)          PDEI   1
      DIMENSION ICOMB(4), TC(8), ALPHA(2), XOL(14),PHIPAY(9), PRES(9,14 PDEI   2
     3), SUM(5,14)                                                       PDEI   3
      DIMENSION NUMB(26,5),IPRCON(5),ONF(130)                            PDEI   4
      INTEGER F(16)                                                      PDEI   5
      DO 102 I=1,5                                                       PDEI   6
      DO 102 J=1,26                                                      PDEI   7
  102 NUMB(J,I)=0                                                        PDEI   8
      IPRCON(1)=5                                                        PDEI   9
      IPRCON(2)=9                                                        PDEI  10
      IPRCON(3)=15                                                       PDEI  11
      IPRCON(4)=19                                                       PDEI  12
      IPRCON(5)=15                                                       PDEI  13
      NUMB(1,1)=1                                                        PDEI  14
      NUMB(2,1)=2                                                        PDEI  15
      NUMB(3,1)=3                                                        PDEI  16
      NUMB(4,1)=4                                                        PDEI  17
      NUMB(5,1)=5                                                        PDEI  18
      NUMB(26,1)=26                                                      PDEI  19
      NUMB(1,2)=1                                                        PDEI  20
      NUMB(2,2)=2                                                        PDEI  21
      NUMB(3,2)=4                                                        PDEI  22
      NUMB(4,2)=6                                                        PDEI  23
      NUMB(5,2)=7                                                        PDEI  24
      NUMB(6,2)=8                                                        PDEI  25
      NUMB(7,2)=3                                                        PDEI  26
      NUMB(8,2)=4                                                        PDEI  27
      NUMB(9,2)=5                                                        PDEI  28
      NUMB(26,2)=26                                                      PDEI  29
      NUMB(1,3)=1                                                        PDEI  30
      NUMB(2,3)=3                                                        PDEI  31
      NUMB(3,3)=10                                                       PDEI  32
      NUMB(4,3)=11                                                       PDEI  33
      NUMB(5,3)=12                                                       PDEI  34
      NUMB(6,3)=13                                                       PDEI  35
      NUMB(7,3)=2                                                        PDEI  36
      NUMB(8,3)=14                                                       PDEI  37
      NUMB(9,3)=15                                                       PDEI  38
      NUMB(10,3)=16                                                      PDEI  39
      NUMB(11,3)=3                                                       PDEI  40
      NUMB(12,3)=17                                                      PDEI  41
      NUMB(13,3)=7                                                       PDEI  42
      NUMB(14,3)=4                                                       PDEI  43
      NUMB(15,3)=8                                                       PDEI  44
      NUMB(26,3)=26                                                      PDEI  45
      NUMB(1,4)=11                                                       PDEI  46
      NUMB(2,4)=18                                                       PDEI  47
      NUMB(3,4)=19                                                       PDEI  48
      NUMB(4,4)=12                                                       PDEI  49
      NUMB(5,4)=20                                                       PDEI  50
      NUMB(6,4)=21                                                       PDEI  51
      NUMB(7,4)=13                                                       PDEI  52
      NUMB(8,4)=16                                                       PDEI  53
      NUMB(9,4)=15                                                       PDEI  54
      NUMB(10,4)=14                                                      PDEI  55
      NUMB(11,4)=17                                                      PDEI  56
      NUMB(12,4)=9                                                       PDEI  57
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      NUMB(13,4)=17                                    PDEI  58
      NUMB(14,4)=2                                     PDEI  59
      NUMB(15,4)=3                                     PDEI  60
      NUMB(16,4)=4                                     PDEI  61
      NUMB(17,4)=8                                     PDEI  62
      NUMB(18,4)=7                                     PDEI  63
      NUMB(19,4)=1                                     PDEI  64
      NUMB(26,4)=25                                    PDEI  65
      NUMB(1,5)=1                                      PDEI  66
      NUMB(2,5)=18                                     PDEI  67
      NUMB(3,5)=11                                     PDEI  68
      NUMB(4,5)=23                                     PDEI  69
      NUMB(5,5)=16                                     PDEI  70
      NUMB(6,5)=13                                     PDEI  71
      NUMB(7,5)=24                                     PDEI  72
      NUMB(8,5)=3                                      PDEI  73
      NUMB(9,5)=4                                      PDEI  74
      NUMB(10,5)=2                                     PDEI  75
      NUMB(11,5)=20                                    PDEI  76
      NUMB(12,5)=25                                    PDEI  77
      NUMB(13,5)=19                                    PDEI  78
      NUMB(14,5)=14                                    PDEI  79
      NUMB(15,5)=12                                    PDEI  80
      NUMB(26,5)=26                                    PDEI  81
      CONF(1)=4H NO                                    PDEI  82
      CONF(2)=4HPARE                                   PDEI  83
      CONF(3)=4HNT                                     PDEI  84
      CONF(4)=4H                                       PDEI  85
      CONF(5)=4H                                       PDEI  86
      CONF(6)=4HN1-3                                   PDEI  87
      CONF(7)=4H2-W                                    PDEI  88
      CONF(8)=4H                                       PDEI  89
      CONF(9)=4H                                       PDEI  90
      CONF(10)=4H                                      PDEI  91
      CONF(11)=4HN1-B                                  PDEI  92
      CONF(12)=4H2-W-                                  PDEI  93
      CONF(13)=4H(P2)                                  PDEI  94
      CONF(14)=4HC                                     PDEI  95
      CONF(15)=4H                                      PDEI  96
      CONF(16)=4HN1-B                                  PDEI  97
      CONF(17)=4H2-W-                                  PDEI  98
      CONF(18)=4H(P2)                                  PDEI  99
      CONF(19)=4H1/3                                   PDEI 100
      CONF(20)=4H                                      PDEI 101
      CONF(21)=4HN1-B                                  PDEI 102
      CONF(22)=4H2-W-                                  PDEI 103
      CONF(23)=4H(P2)                                  PDEI 104
      CONF(24)=4H2/3                                   PDEI 105
      CONF(25)=4H                                      PDEI 106
      CONF(26)=4HN1-B                                  PDEI 107
      CONF(27)=4H2-W-                                  PDEI 108
      CONF(28)=4H(P2)                                  PDEI 109
      CONF(29)=4H1/3-                                  PDEI 110
      CONF(30)=4HS                                     PDEI 111
      CONF(31)=4HN1-B                                  PDEI 112
      CONF(32)=4H2-W-                                  PDEI 113
      CONF(33)=4H(P2)                                  PDEI 114
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      CONF(34)=4H1/3T                                          PDEI 115
      CONF(35)=4HS2S3                                          PDEI 116
      CONF(36)=4HN1-B                                          PDEI 117
      CONF(37)=4H2-W-                                          PDEI 118
      CONF(38)=4H(P2)                                          PDEI 119
      CONF(39)=4H1/3-                                          PDEI 120
      CONF(40)=4H1                                             PDEI 121
      CONF(41)=4HN1-B                                          PDEI 122
      CONF(42)=4H1                                             PDEI 123
      CONF(43)=4H                                              PDEI 124
      CONF(44)=4H                                              PDEI 125
      CONF(45)=4H                                              PDEI 126
      CONF(46)=4HN3-B                                          PDEI 127
      CONF(47)=4H1-A3                                          PDEI 128
      CONF(48)=4H                                              PDEI 129
      CONF(49)=4H                                              PDEI 130
      CONF(50)=4H                                              PDEI 131
      CONF(51)=4HN3-B                                          PDEI 132
      CONF(52)=4H2-W-                                          PDEI 133
      CONF(53)=4HA4                                            PDEI 134
      CONF(54)=4H                                              PDEI 135
      CONF(55)=4H                                              PDEI 136
      CONF(56)=4HN3-B                                          PDEI 137
      CONF(57)=4H2-W-                                          PDEI 138
      CONF(58)=4HA5                                            PDEI 139
      CONF(59)=4H                                              PDEI 140
      CONF(60)=4H                                              PDEI 141
      CONF(61)=4HN3-B                                          PDEI 142
      CONF(62)=4H2-W-                                          PDEI 143
      CONF(63)=4HA3                                            PDEI 144
      CONF(64)=4H                                              PDEI 145
      CONF(65)=4H                                              PDEI 146
      CONF(66)=4HN1-B                                          PDEI 147
      CONF(67)=4H2-W-                                          PDEI 148
      CONF(68)=4HP3-1                                          PDEI 149
      CONF(69)=4H/3                                            PDEI 150
      CONF(70)=4H                                              PDEI 151
      CONF(71)=4HN3-B                                          PDEI 152
      CONF(72)=4H2-W-                                          PDEI 153
      CONF(73)=4HA3-P                                          PDEI 154
      CONF(74)=4H3-1/                                          PDEI 155
      CONF(75)=4H3                                             PDEI 156
      CONF(76)=4HN3-B                                          PDEI 157
      CONF(77)=4H2-W-                                          PDEI 158
      CONF(78)=4HA3-(                                          PDEI 159
      CONF(79)=4HP2)-                                          PDEI 160
      CONF(80)=4HC                                             PDEI 161
      CONF(81)=4HN1-B                                          PDEI 162
      CONF(82)=4H2-W-                                          PDEI 163
      CONF(83)=4H(P3)                                          PDEI 164
      CONF(84)=4H- 2/                                          PDEI 165
      CONF(85)=4H3                                             PDEI 166
      CONF(86)=4HN3-B                                          PDEI 167
      CONF(87)=4H2-W-                                          PDEI 168
      CONF(88)=4HA4-(                                          PDEI 169
      CONF(89)=4HP2)-                                          PDEI 170
      CONF(90)=4HC                                             PDEI 171
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      CONF(91)=4HN3-9                                   POEI 172
      CONF(92)=4H2-N-                                   POEI 173
      CONF(93)=4HA4-(                                   POEI 174
      CONF(94)=4HP3)-                                   POEI 175
      CONF(95)=4H1/3                                    POEI 176
      CONF(96)=4HN3-9                                   POEI 177
      CONF(97)=4H2-N-                                   POEI 178
      CONF(98)=4HA5-(                                   POEI 179
      CONF(99)=4HP2)-                                   POEI 180
      CONF(100)=4HC                                     POEI 181
      CONF(101)=4HN3-8                                  POEI 182
      CONF(102)=4H2-N-                                  POEI 183
      CONF(103)=4HA5-(                                  POEI 184
      CONF(104)=4HP3)-                                  POEI 185
      CONF(105)=4H1/3                                   POEI 186
      CONF(106)=4H                                      POEI 187
      CONF(107)=4H                                      POEI 188
      CONF(108)=4H                                      POEI 189
      CONF(109)=4H                                      POEI 190
      CONF(110)=4H                                      POEI 191
      CONF(111)=4HN3-8                                  POEI 192
      CONF(112)=4H2-N-                                  POEI 193
      CONF(113)=4HA4-F                                  POEI 194
      CONF(114)=4H                                      POEI 195
      CONF(115)=4H                                      POEI 196
      CONF(116)=4HN3-9                                  POEI 197
      CONF(117)=4H2-N-                                  POEI 198
      CONF(118)=4HA3-F                                  POEI 199
      CONF(119)=4H                                      POEI 200
      CONF(120)=4H                                      POEI 201
      CONF(121)=4HN3-9                                  POEI 202
      CONF(122)=4H2-N-                                  POEI 203
      CONF(123)=4HA5-F                                  POEI 204
      CONF(124)=4H                                      POEI 205
      CONF(125)=4H                                      POEI 206
      CONF(126)=4HUNKN                                  POEI 207
      CONF(127)=4HOWN                                   POEI 208
      CONF(128)=4H                                      POEI 209
      CONF(129)=4H                                      POEI 210
      CONF(130)=4H                                      POEI 211
      ICOUNT=0                                          POEI 212
      READ(5,26) INUM,IENTRY                            POEI 213
      IENTRY=5                                          POEI 214
      READ(5,25) (F(I),I=1,INUM)                        POEI 215
    1 READ(1,2) IGNEW,ICODE,NP,NSTAT,IPLUG,(ICOMB(I),I=1,4)   POEI 216
    2 FORMAT(3I10)                                      POEI 217
      IF(EOF(1 ))22,23                                  POEI 218
   23 READ(1,3)(TC(I),I=1,8)                            POEI 219
    3 FORMAT(1X(1PE12.4))                               POEI 220
      READ(1,3) (ALPHA(I),I=1,2),PHI,FAN,DX,DY,DZ       POEI 221
      READ(1,3) (XOL(I),I=1,14)                         POEI 222
      DO 4 I=1,NP                                       POEI 223
    4 READ(1,3)PHIKAY(I), (PRES(I,J),J=1,NSTAT)         POEI 224
      FIPLG=IPLUG                                       POEI 225
      IF(FIPLG.LT.0.25.OR.FIPLG.GT.3.00) FIPLG=9999999999.   POEI 226
      IF(FIPLG.GT.0.25.AND.FIPLG.LT.1.00) FIPLG=0.81    POEI 227
      IF(FIPLG.GT.1.50.AND.FIPLG.LT.2.50) FIPLG=1.63    POEI 228
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      IF(FIPLG.GT.2.50.AND.FIPLG.LT.3.50) FIPLG=3.25
      CN=0.
      CY=0.
      CLM=0.
      CLN=0.
      CA=0.
      DO 5 I=1,3
      READ(1,3)(SUM(I,J),J=1,NSTAT
      DO 28 I=1,INUM
      IF(F(I).EQ.IGNEW) GO TO 29
   28 CONTINUE
      GO TO 1
   29 ICOUNT=ICOUNT+1
      DO 6 I=1,14
      DXX=.2/3.
      IF(I.EQ.1.OR.I.EQ.14) DXX=.1
      DXX=DXX*6.0
      FI=I
      SUM(5,I)=SUM(2,I)*DXX*(.5-(FI*2./3.*.1))*(6./.75)
      SUM(4,I)=SUM(1,I)*DXX*(.5-(FI*2./3.*.1))*(6.0/.75)
      CN=CN+SUM(1,I)
      CY=CY+SUM(2,I)
      CLM=CLM+SUM(4,I)
      CLN=CLN+SUM(5,I)
    5 CA=CA+SUM(3,I)
      IDX=25
      ICONFG=ICODE
      IL=IPRCON(IENTRY)
      DO 101 I=1,IL
      IF(ICONFG.EQ.I) IDX=I
  101 CONTINUE
      IDXX=NUMB(IDX,IENTRY)
      IDXX=(5*IDXX+1)-5
      WRITE(6,25)
      WRITE(6,7)
      WRITE(6,24)
      WRITE(6,27)IGNEW,(TC(I),I=1,3),TC(7),(TC(I),I=4,6),TC(8)
      INIDXX=IDXX+4
      WRITE(6,8) (CONF(I),I=IDXX,INIDXX),FIPLG,ALPHA(1)
      WRITE(6,9) PHI,ALPHA(2),YAW,DX,DY,DZ
      WRITE(6,10)
      WRITE(6,11) (XOL(I),I=1,14)
      WRITE(6,10)
      WRITE(6,12)
      DO 13 I=1,9
   13 WRITE(6,14) PHIRAY(I),(PRES(I,J),J=1,NSTAT)
      WRITE(6,10)
      WRITE(6,15) (SUM(1,I),I=1,NSTAT       )
      WRITE(6,16) (SUM(2,I),I=1,NSTAT       )
      WRITE(6,17) (SUM(3,I),I=1,NSTAT       )
      WRITE(6,18) (SUM(4,I),I=1,NSTAT       )
      WRITE(6,19) (SUM(5,I),I=1,NSTAT       )
      WRITE(6,20) CN,CY,CA,CLM,CLN
      WRITE(6,21)(ICOMB(I),I=1,4)
      IF(ICOUNT.EQ.INUM) GO TO 22
      GO TO 1
   22 STOP
```

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      7 FORMAT(/,1X,75HINTEGRATED PRESSURE DISTRIBUTIONS FROM J41A-J6A JANPDEI 286
       1-FEB 1978 AEDC-TSR-78-V2)                                        PDEI 287
    8    FORMAT(/,1X,16HPARENT CONFIG = ,5A4 ,5X,5HLP = ,F7.2,5X,        PDEI 288
       113HALPHA(PAR) = ,F6.2)                                           PDEI 289
    9    FORMAT(/,1X,6HPHI = ,F7.2,5X,                                   PDEI 290
       1           15HALPHA(STORE) = ,F6.2,5X,13HYAW(STORE) = ,F6.2,5X,  PDEI 291
       18HDX,IN = ,                                                      PDEI 292
       2     ,F6.2,5X,8HDY,IN = ,F6.2,5X,8HDZ,IN = ,F6.2)                PDEI 293
   10    FORMAT(//)                                                      PDEI 294
   11    FORMAT(3X,3HX/L,F11.4,13F8.4,//)                                PDEI 295
   12    FORMAT(1X,8HPHI(RAY)3X,14(6H P/P8    ),//)                      PDEI 296
   14    FORMAT(1X,F7.1,F10.3,13F8.3,/)                                  PDEI 297
   15    FORMAT(1X,8HDCN/DX  ,14F8.4/)                                   PDEI 298
   16    FORMAT(1X,8HDCY/DX  ,14F8.4/)                                   PDEI 299
   17    FORMAT(1X,8HDCA/DX  ,14F8.4/)                                   PDEI 300
   18    FORMAT(1X,8HDCLM/DX ,14F8.4/)                                   PDEI 301
   19    FORMAT(1X,8HDCLN/DX ,14F8.4/)                                   PDEI 302
   20    FORMAT(//,1X,                                                   PDEI 303
       1          5HCN = ,F6.2,5X,5HCY = ,F6.2,5X,5HCA = ,F6.2,5X,6HCLM = PDEI 304
       * ,F6.2,5X,5HCLN = ,F6.2)                                         PDEI 305
   21    FORMAT(//,42HPRESSURE DISTRIBUTION GROUP NUMBERS USED *,4I8)    PDEI 306
   24    FORMAT(/,2X,5HGROUP,2X,4HMACH,2X,7HPO,PSIA,2X,                  PDEI 307
       19HTO,DEG(R),2X,11HRE/FT*10**6,2X,7HP8,PSIA,2X,                   PDEI 308
       29HT8,DEG(R),2X,7HQ8,PSIA,2X,3HV8,FT/SEC)                         PDEI 309
   25    FORMAT(1H1)                                                     PDEI 310
      26 FORMAT(16I5)                                                    PDEI 311
   27    FORMAT(2X,I4,F7.2,F9.3,F10.2,F11.2,F11.3,F11.2,F10.3,           PDEI 312
       1F10.1)                                                           PDEI 313
         END                                                             PDEI 314
```

INTEGRATED PRESSURE DISTRIBUTIONS FROM /41A-/6A JAN-FEB 1978 AEDC-TSR-78-/2

GROUP	MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	PB,PSIA	TB,DEG(R)	QB,PSIA	VB,FT/SEC
1	1.50	14.488	581.67	4.00	3.947	401.15	6.216	1472.8

PARENT CONFIG = NO PARENT LP = ******* ALPHA(PAR) = 5.00

PHI = .07 ALPHA(STORE) = .01 YAW(STORE) = -.01 DX,IN = 18.00 DY,IN = -.01 DZ,IN = 2.00

X/L	.0667	.1333	.2000	.2667	.3333	.4000	.4667	.5333	.6000	.6667	.7333	.8000	.8667	.9333
PHI(RAY)	P/PB	P/PB	P/PB	P/PB	P/PB	P/PB	P/PB	P/PB	P/PB	P/PB	P/PB	P/PB	P/PB	P/PB
0.0	1.495	1.310	1.172	1.027	.955	.952	.863	.883	.913	.945	.965	.970	.979	.990
55.0	1.527	1.361	1.195	1.050	.941	.958	.887	.916	.942	.961	.972	.982	.991	1.005
90.0	1.760	1.485	1.269	1.075	.925	.973	.890	.926	.932	.949	.957	.966	.975	.986
125.0	1.521	1.325	1.175	1.039	.942	.958	.872	.906	.924	.944	.958	.965	.974	.993
180.0	1.503	1.323	1.182	1.040	.971	.966	.875	.889	.920	.941	.955	.968	.974	.984
235.0	1.517	1.315	1.184	1.050	.957	.864	.888	.911	.923	.942	.952	.967	.971	.986
270.0	1.744	1.470	1.265	1.064	.925	.868	.880	.917	.926	.943	.949	.959	.965	.982
305.0	1.537	1.337	1.185	1.046	.946	.865	.879	.913	.935	.958	.973	.985	.991	1.016
360.0	1.495	1.310	1.172	1.027	.955	.852	.863	.883	.913	.945	.965	.970	.979	.990

DCN/DX	-.0018	-.0081	-.0027	.0013	.0077	.0136	.0013	-.0021	-.0071	-.0110	-.0138	-.0114	-.0127	-.0145
DCY/DX	-.0011	-.0045	-.0007	-.0017	.0024	.0103	-.0016	-.0019	-.0023	-.0023	-.0027	-.0011	-.0030	-.0085
DCA/DX	.1647	.1445	.0793	.0155	-.0104	-.0051	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DCLM/DX	-.0036	-.0035	-.0026	.0010	.0041	.0012	.0001	.0002	.0023	.0059	.0133	.0110	.0150	.0302
DCLN/DX	-.0022	-.0053	-.0007	-.0013	.0013	.0001	-.0002	.0002	.0007	.0012	.0020	.0010	.0036	.0018

CN = -.07 CY = -.02 CA = .39 CLM = .07 CLN = .00

PRESSURE DISTRIBUTION GROUP NUMBERS USED : 874 7?3 961 989

APPENDIX E

FORCE AND MOMENT DATA RETRIEVAL PROGRAM

```
      PROGRAM FORCE  (INPUT,OUTPUT,TAPE6=OUTPUT,TAPE1)              FORCE  1
      DIMENSION A(20),B(70,20)                                      FORCE  2
      DIMENSION NUMS(12,5),ISTCON(5),CONFS(60)                      FORCE  3
      INTEGER C(20),D(16)                                           FORCE  4
      DIMENSION NUMR(26,5),IPRCON(5),CONF(130)                      FORCE  5
      DO 110 I=1,5                                                  FORCE  6
      DO 110 J=1,12                                                 FORCE  7
  110 NUMS(J,I)=12                                                  FORCE  8
      ISTCON(1)=4                                                   FORCE  9
      ISTCON(2)=1                                                   FORCE 10
      ISTCON(3)=2                                                   FORCE 11
      ISTCON(4)=4                                                   FORCE 12
      ISTCON(5)=11                                                  FORCE 13
      NUMS(2,1)=5                                                   FORCE 14
      NUMS(3,1)=3                                                   FORCE 15
      NUMS(4,1)=4                                                   FORCE 16
      NUMS(1,2)=4                                                   FORCE 17
      NUMS(1,3)=1                                                   FORCE 18
      NUMS(2,3)=2                                                   FORCE 19
      NUMS(1,4)=1                                                   FORCE 20
      NUMS(2,4)=3                                                   FORCE 21
      NUMS(3,4)=5                                                   FORCE 22
      NUMS(4,4)=2                                                   FORCE 23
      NUMS(3,5)=1                                                   FORCE 24
      NUMS(4,5)=2                                                   FORCE 25
      NUMS(5,5)=3                                                   FORCE 26
      NUMS(6,5)=6                                                   FORCE 27
      NUMS(7,5)=7                                                   FORCE 28
      NUMS(8,5)=8                                                   FORCE 29
      NUMS(9,5)=9                                                   FORCE 30
      NUMS(10,5)=10                                                 FORCE 31
      NUMS(11,5)=11                                                 FORCE 32
      CONFS(1)=4HSCOC                                               FORCE 33
      CONFS(2)=4H PHI                                               FORCE 34
      CONFS(3)=4H=45.                                               FORCE 35
      CONFS(4)=4H DEG                                               FORCE 36
      CONFS(5)=4H.                                                  FORCE 37
      CONFS(6)=4HSPOC                                               FORCE 38
      CONFS(7)=4H PHI                                               FORCE 39
      CONFS(8)=4H=0.5                                               FORCE 40
      CONFS(9)=4H DEG                                               FORCE 41
      CONFS(10)=4H.                                                 FORCE 42
      CONFS(11)=4HSLFN                                              FORCE 43
      CONFS(12)=4H PHI                                              FORCE 44
      CONFS(13)=4H=0.0                                              FORCE 45
      CONFS(14)=4H DEG                                              FORCE 46
      CONFS(15)=4H.                                                 FORCE 47
      CONFS(16)=4HSLFF                                              FORCE 48
      CONFS(17)=4H PHI                                              FORCE 49
      CONFS(18)=4H=45.                                              FORCE 50
      CONFS(19)=4H DEG                                              FORCE 51
      CONFS(20)=4H.                                                 FORCE 52
      CONFS(21)=4HCIRC                                              FORCE 53
      CONFS(22)=4HULAP                                              FORCE 54
      CONFS(23)=4H PRE                                              FORCE 55
      CONFS(24)=4HSS S                                              FORCE 56
      CONFS(25)=4HTORE                                              FORCE 57
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      CONFS(26)=4HSTOC                                             FORCE 58
      CONFS(27)=4H PHI                                             FORCE 59
      CONFS(28)=4H=0.0                                             FORCE 60
      CONFS(29)=4H DEG                                             FORCE 61
      CONFS(30)=4H.                                                FORCE 62
      CONFS(31)=4HSTOC                                             FORCE 63
      CONFS(32)=4H PHI                                             FORCE 64
      CONFS(33)=4H=60.                                             FORCE 65
      CONFS(34)=4H DEG                                             FORCE 66
      CONFS(35)=4H.                                                FORCE 67
      CONFS(36)=4HSF P                                             FORCE 68
      CONFS(37)=4HHI=0                                             FORCE 69
      CONFS(38)=4H.0 D                                             FORCE 70
      CONFS(39)=4HEG.                                              FORCE 71
      CONFS(40)=4H                                                 FORCE 72
      CONFS(41)=4HSEP1                                             FORCE 73
      CONFS(42)=4H                                                 FORCE 74
      CONFS(43)=4H                                                 FORCE 75
      CONFS(44)=4H                                                 FORCE 76
      CONFS(45)=4H                                                 FORCE 77
      CONFS(46)=4HSEP2                                             FORCE 78
      CONFS(47)=4H                                                 FORCE 79
      CONFS(48)=4H                                                 FORCE 80
      CONFS(49)=4H                                                 FORCE 81
      CONFS(50)=4H                                                 FORCE 82
      CONFS(51)=4HSEP2                                             FORCE 83
      CONFS(52)=4HW                                                FORCE 84
      CONFS(53)=4H                                                 FORCE 85
      CONFS(54)=4H                                                 FORCE 86
      CONFS(55)=4H                                                 FORCE 87
      CONFS(56)=4HUNKN                                             FORCE 88
      CONFS(57)=4HOWN                                              FORCE 89
      CONFS(58)=4H                                                 FORCE 90
      CONFS(59)=4H                                                 FORCE 91
      CONFS(60)=4H                                                 FORCE 92
      DO 102 I=1,5                                                 FORCE 93
      DO 102 J=1,26                                                FORCE 94
  102 NUMB(J,I)=0                                                  FORCE 95
      IPRCON(1)=5                                                  FORCE 96
      IPRCON(2)=9                                                  FORCE 97
      IPRCON(3)=15                                                 FORCE 98
      IPRCON(4)=19                                                 FORCE 99
      IPRCON(5)=15                                                 FORCE100
      NUMB(1,1)=1                                                  FORCE101
      NUMB(2,1)=2                                                  FORCE102
      NUMB(3,1)=3                                                  FORCE103
      NUMB(4,1)=4                                                  FORCE104
      NUMB(5,1)=5                                                  FORCE105
      NUMB(26,1)=26                                                FORCE106
      NUMB(1,2)=1                                                  FORCE107
      NUMB(2,2)=2                                                  FORCE108
      NUMB(3,2)=4                                                  FORCE109
      NUMB(4,2)=6                                                  FORCE110
      NUMB(5,2)=7                                                  FORCE111
      NUMB(6,2)=8                                                  FORCE112
      NUMB(7,2)=7                                                  FORCE113
      NUMB(8,2)=4                                                  FORCE114
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      NUMB(9,2)=5                                                       FORCE115
      NUMB(26,2)=26                                                     FORCE116
      NUMB(1,3)=1                                                       FORCE117
      NUMB(2,3)=9                                                       FORCE118
      NUMB(3,3)=10                                                      FORCE119
      NUMB(4,3)=11                                                      FORCE120
      NUMB(5,3)=12                                                      FORCE121
      NUMB(6,3)=13                                                      FORCE122
      NUMB(7,3)=2                                                       FORCE123
      NUMB(8,3)=14                                                      FORCE124
      NUMB(9,3)=15                                                      FORCE125
      NUMB(10,3)=15                                                     FORCE126
      NUMB(11,3)=3                                                      FORCE127
      NUMB(12,3)=17                                                     FORCE128
      NUMB(13,3)=7                                                      FORCE129
      NUMB(14,3)=4                                                      FORCE130
      NUMB(15,3)=8                                                      FORCE131
      NUMB(26,3)=26                                                     FORCE132
      NUMB(1,4)=11                                                      FORCE133
      NUMB(2,4)=18                                                      FORCE134
      NUMB(3,4)=19                                                      FORCE135
      NUMB(4,4)=12                                                      FORCE136
      NUMB(5,4)=20                                                      FORCE137
      NUMB(6,4)=21                                                      FORCE138
      NUMB(7,4)=13                                                      FORCE139
      NUMB(8,4)=16                                                      FORCE140
      NUMB(9,4)=15                                                      FORCE141
      NUMB(10,4)=14                                                     FORCE142
      NUMB(11,4)=10                                                     FORCE143
      NUMB(12,4)=9                                                      FORCE144
      NUMB(13,4)=17                                                     FORCE145
      NUMB(14,4)=2                                                      FORCE146
      NUMB(15,4)=3                                                      FORCE147
      NUMB(16,4)=4                                                      FORCE148
      NUMB(17,4)=8                                                      FORCE149
      NUMB(18,4)=7                                                      FORCE150
      NUMB(19,4)=1                                                      FORCE151
      NUMB(26,4)=26                                                     FORCE152
      NUMB(1,5)=1                                                       FORCE153
      NUMB(2,5)=18                                                      FORCE154
      NUMB(3,5)=11                                                      FORCE155
      NUMB(4,5)=23                                                      FORCE156
      NUMB(5,5)=16                                                      FORCE157
      NUMB(6,5)=13                                                      FORCE158
      NUMB(7,5)=24                                                      FORCE159
      NUMB(8,5)=3                                                       FORCE160
      NUMB(9,5)=4                                                       FORCE161
      NUMB(10,5)=2                                                      FORCE162
      NUMB(11,5)=20                                                     FORCE163
      NUMB(12,5)=25                                                     FORCE164
      NUMB(13,5)=19                                                     FORCE165
      NUMB(14,5)=14                                                     FORCE166
      NUMB(15,5)=12                                                     FORCE167
      NUMB(26,5)=26                                                     FORCE168
      CONF(1)=4H NO                                                     FORCE169
      CONF(2)=4HPARE                                                    FORCE170
      CONF(3)=4HHNT                                                     FORCE171
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      CONF(4)=4H                                          FORCE172
      CONF(5)=4H                                          FORCE173
      CONF(6)=4HN1-B                                      FORCE174
      CONF(7)=4H2-W                                       FORCE175
      CONF(8)=4H                                          FORCE176
      CONF(9)=4H                                          FORCE177
      CONF(10)=4H                                         FORCE178
      CONF(11)=4HN1-B                                     FORCE179
      CONF(12)=4H2-W-                                     FORCE180
      CONF(13)=4H(P2)                                     FORCE181
      CONF(14)=4HC                                        FORCE182
      CONF(15)=4H                                         FORCE183
      CONF(16)=4HN1-B                                     FORCE184
      CONF(17)=4H2-W-                                     FORCE185
      CONF(18)=4H(P2)                                     FORCE186
      CONF(19)=4H1/3                                      FORCE187
      CONF(20)=4H                                         FORCE188
      CONF(21)=4HN1-B                                     FORCE189
      CONF(22)=4H2-W-                                     FORCE190
      CONF(23)=4H(P2)                                     FORCE191
      CONF(24)=4H2/3                                      FORCE192
      CONF(25)=4H                                         FORCE193
      CONF(26)=4HN1-B                                     FORCE194
      CONF(27)=4H2-W-                                     FORCE195
      CONF(28)=4H(P2)                                     FORCE196
      CONF(29)=4H1/3-                                     FORCE197
      CONF(30)=4HS                                        FORCE198
      CONF(31)=4HN1-B                                     FORCE199
      CONF(32)=4H2-W-                                     FORCE200
      CONF(33)=4H(P2)                                     FORCE201
      CONF(34)=4H1/3T                                     FORCE202
      CONF(35)=4HS2S3                                     FORCE203
      CONF(36)=4HN1-B                                     FORCE204
      CONF(37)=4H2-W-                                     FORCE205
      CONF(38)=4H(P2)                                     FORCE206
      CONF(39)=4H1/3-                                     FORCE207
      CONF(40)=4HT                                        FORCE208
      CONF(41)=4HN1-B                                     FORCE209
      CONF(42)=4H1                                        FORCE210
      CONF(43)=4H                                         FORCE211
      CONF(44)=4H                                         FORCE212
      CONF(45)=4H                                         FORCE213
      CONF(46)=4HN3-B                                     FORCE214
      CONF(47)=4H1-A3                                     FORCE215
      CONF(48)=4H                                         FORCE216
      CONF(49)=4H                                         FORCE217
      CONF(50)=4H                                         FORCE218
      CONF(51)=4HN3-B                                     FORCE219
      CONF(52)=4H2-W-                                     FORCE220
      CONF(53)=4HA4                                       FORCE221
      CONF(54)=4H                                         FORCE222
      CONF(55)=4H                                         FORCE223
      CONF(56)=4HN3-B                                     FORCE224
      CONF(57)=4H2-W-                                     FORCE225
      CONF(58)=4HA5                                       FORCE226
      CONF(59)=4H                                         FORCE227
      CONF(60)=4H                                         FORCE228
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      CONF(61)=4HN3-B                                            FORCE229
      CONF(62)=4H2-W-                                            FORCE230
      CONF(63)=4HA3                                              FORCE231
      CONF(64)=4H                                                FORCE232
      CONF(65)=4H                                                FORCE233
      CONF(66)=4HN1-B                                            FORCE234
      CONF(67)=4H2-W-                                            FORCE235
      CONF(68)=4HP3-1                                            FORCE236
      CONF(69)=4H/3                                              FORCE237
      CONF(70)=4H                                                FORCE238
      CONF(71)=4HN3-B                                            FORCE239
      CONF(72)=4H2-W-                                            FORCE240
      CONF(73)=4HA3-P                                            FORCE241
      CONF(74)=4H3-1/                                            FORCE242
      CONF(75)=4H3                                               FORCE243
      CONF(76)=4HN3-B                                            FORCE244
      CONF(77)=4H2-W-                                            FORCE245
      CONF(78)=4HA3-(                                            FORCE246
      CONF(79)=4HP2)-                                            FORCE247
      CONF(80)=4HC                                               FORCE248
      CONF(81)=4HN1-B                                            FORCE249
      CONF(82)=4H2-W-                                            FORCE250
      CONF(83)=4H(P3)                                            FORCE251
      CONF(84)=4H- 2/                                            FORCE252
      CONF(85)=4H3                                               FORCE253
      CONF(86)=4HN3-B                                            FORCE254
      CONF(87)=4H2-W-                                            FORCE255
      CONF(88)=4HA4-(                                            FORCE256
      CONF(89)=4HP2)-                                            FORCE257
      CONF(90)=4HC                                               FORCE258
      CONF(91)=4HN3-B                                            FORCE259
      CONF(92)=4H2-W-                                            FORCE260
      CONF(93)=4HA4-(                                            FORCE261
      CONF(94)=4HP3)-                                            FORCE262
      CONF(95)=4H1/3                                             FORCE263
      CONF(96)=4HN3-B                                            FORCE264
      CONF(97)=4H2-W-                                            FORCE265
      CONF(98)=4HA5-(                                            FORCE266
      CONF(99)=4HP2)-                                            FORCE267
      CONF(100)=4HC                                              FORCE268
      CONF(101)=4HN3-B                                           FORCE269
      CONF(102)=4H2-W-                                           FORCE270
      CONF(103)=4HA5-(                                           FORCE271
      CONF(104)=4HP3)-                                           FORCE272
      CONF(105)=4H1/3                                            FORCE273
      CONF(106)=4H                                               FORCE274
      CONF(107)=4H                                               FORCE275
      CONF(108)=4H                                               FORCE276
      CONF(109)=4H                                               FORCE277
      CONF(110)=4H                                               FORCE278
      CONF(111)=4HN3-B                                           FORCE279
      CONF(112)=4H2-W-                                           FORCE280
      CONF(113)=4HA4-F                                           FORCE281
      CONF(114)=4H                                               FORCE282
      CONF(115)=4H                                               FORCE283
      CONF(116)=4HN3-B                                           FORCE284
      CONF(117)=4H2-W-                                           FORCE285
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      CONF(118)=4HA3-F                                             FORCE286
      CONF(119)=4H                                                 FORCE287
      CONF(120)=4H                                                 FORCE288
      CONF(121)=4HN3-B                                             FORCE289
      CONF(122)=4H2-W-                                             FORCE290
      CONF(123)=4HA5-F                                             FORCE291
      CONF(124)=4H                                                 FORCE292
      CONF(125)=4H                                                 FORCE293
      CONF(126)=4HUNKN                                             FORCE294
      CONF(127)=4HOWN                                              FORCE295
      CONF(128)=4H                                                 FORCE296
      CONF(129)=4H                                                 FORCE297
      CONF(130)=4H                                                 FORCE298
      IPRINT=0                                                     FORCE299
      ICOUNT=0                                                     FORCE300
      READ(1,12) (C(I),I=1,20)                                     FORCE301
      READ 14,INUM,IENTRY                                          FORCE302
      READ 14,(D(I),I=1,INUM)                                      FORCE303
    9 READ(1,1) (A(I),I=1,18)                                      FORCE304
      IF(EOF(1)) 2,3                                               FORCE305
    3 M=A(1)                                                       FORCE306
      IF(A(16).LT.0.25.OR.A(16).GT.3.50) A(16)=9999.               FORCE307
      IF(A(16).GT.0.25.AND.A(16).LT.1.50) A(16)=0.91               FORCE308
      IF(A(16).GT.1.50.AND.A(16).LT.2.50) A(16)=1.63               FORCE309
      IF(A(16).GT.2.50.AND.A(16).LT.3.50) A(16)=3.25               FORCE310
      IGROUP=A(2)                                                  FORCE311
      DO 6 I=1,M                                                   FORCE312
    6 READ(1,1) (B(I,J),J=1,10)                                    FORCE313
      DO 7 I=1,M                                                   FORCE314
    7 READ(1,1) (B(I,J),J=11,16)                                   FORCE315
      DO 15 I=1,INUM                                               FORCE316
      IF(IGROUP.EQ.D(I)) IPRINT=1                                  FORCE317
   15 CONTINUE                                                     FORCE318
      IF (IPRINT.EQ.0) GO TO 9                                     FORCE319
      ICOUNT=ICOUNT+1                                              FORCE320
      ICONFS=A(15)                                                 FORCE321
      IDXS=12                                                      FORCE322
      IL=ISTCON(IENTRY)                                            FORCE323
      DO 112 I=1,IL                                                FORCE324
      IF(ICONFS.EQ.I) IDXS=I                                       FORCE325
  112 CONTINUE                                                     FORCE326
      IDXS=NUMS(IDXS,IENTRY)                                       FORCE327
      IDXS=(5*IDXS+1)-5                                            FORCE328
      IDX=26                                                       FORCE329
      ICONFG=A(14)                                                 FORCE330
      IL=IPRCON(IENTRY)                                            FORCE331
      DO 101 I=1,IL                                                FORCE332
      IF(ICONFG.EQ.I) IDX=I                                        FORCE333
  101 CONTINUE                                                     FORCE334
      IDXX=NUMB(IDX,IENTRY)                                        FORCE335
      IDXX=(5*IDXX+1)-5                                            FORCE336
      WRITE(6,13) (C(I),I=1,20)                                    FORCE337
      WRITE(6,4)                                                   FORCE338
      WRITE(6,5) IGROUP,(A(I),I=3,11),A(13)                        FORCE339
      INIDXX=IDXX+4                                                FORCE340
      WRITE(6,16) (CONF(I),I=IDXX,INIDXX),A(12)                    FORCE341
      INIDXS=IDXS+4                                                FORCE342
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```
      WRITE(6,17) (CONFS(I),I=IDXS,INIDXS),A(16)                        FORCE343
      WRITE(6,18)                                                       FORCE344
      WRITE(6,19)                                                       FORCE345
      DO 10 I=1,M                                                       FORCE346
   10 WRITE(6,11) (B(I,J),J=1,16)                                       FORCE347
      IPPINT=0                                                          FORCE348
      IF(ICOUNT.EQ.INUM) GO TO 2                                        FORCE349
      GO TO 9                                                           FORCE350
    2 STOP                                                              FORCE351
    1 FORMAT(10E12.4)                                                   FORCE352
4     FORMAT(/,2X,5HGROUP,2X,4HMACH,2X,7HPO,PSIA,2X,                    FORCE353
     19HTO,DEG(R),2X,11HRE/FT*10**6,2X,7HPB,PSIA,2X,                    FORCE354
     29HTB,DEG(R),2X,7HQB,PSIA,2X,9HVB,FT/SEC,2X,                       FORCE355
     39HPREF,PSIA,2X,8HROLL,DEG)                                        FORCE356
5     FORMAT(2X,I4,F7.2,F9.3,F10.2,F11.2,F11.3,F1 .2,F10.3,             FORCE357
     1F10.1,F11.4,F9.2)                                                 FORCE358
   11 FORMAT(1X,F6.2,F7.2,14F8.3)                                       FORCE359
   12 FORMAT(20A4)                                                      FORCE360
   13 FORMAT(1H1,1X,20A4)                                               FORCE361
   14 FORMAT(16I5)                                                      FORCE362
   16 FORMAT(/,1X,14HPARENT CONFIG=,5A4,5X,11HALPHA(PAR)=,F5.1)         FORCE363
   17 FORMAT(/,1X,14HSTORE   CONFIG=,5A4,5X,3HLP=,F5.2)                 FORCE364
   18 FORMAT(/,3X,5HALPHA,3X,3HYAW,3X,6HDX(IN),2X,6HDY(IN),2X,          FORCE365
     16HDZ(IN),4X,2HCN,5X,3HCLM,3X,6HCLM/CN,4X,2HCY,6X,3HCLN,           FORCE366
     25X,3HCLL,5X,3HCAT,2X,8HPB(1)/P8,1X,8HPB(2)/PA,2X,3HCPB,5X,2HCA)   FORCE367
   19 FORMAT(3X,5H(DEG),2X,5H(DEG))                                     FORCE368
      END                                                               FORCE369
```

FORCE DATA FROM V41A-B4A JUNE-JULY 1975 TUNNEL ENTRY VKF-TR-75-164

GROUP	MACH	P0,PSIA	T0,DEG(R)	RE/FT*10**6	P8,PSIA	T8,DEG(R)	Q8,PSIA	V8,FT/SEC	PREF,PSIA	ROLL,DEG
417	2.50	20.983	623.00	3.45	1.228	276.89	5.373	2038.4	.6416	0.00

PARENT CONFIG=UNKNOWN ALPHA(PAR)= 0.0

STORE CONFIG=UNKNOWN LP=*****

ALPHA (DEG)	YAW (DEG)	DX(IN)	DY(IN)	DZ(IN)	CN	CLM	CLM/CN	CY	CLN	CLL	CAT	PB(1)/P8	PB(2)/P8	CPB	CA
-.02	.00	.002	.006	.470	.078	-.451	*********	-.019	.022	.003	.346	.581	0.000	-.096	.250
.02	.01	.002	.007	.621	.051	-.346	*********	-.020	.033	.002	.337	.588	0.000	-.094	.243
.02	.00	.003	.004	.871	-.006	-.035	*********	-.016	.038	.002	.331	.590	0.000	-.094	.237
.02	.00	.002	.005	1.120	-.023	.129	*********	-.011	.022	.002	.324	.604	0.000	-.091	.234
.01	.01	.002	.007	1.371	-.031	.240	*********	-.007	.012	.003	.327	.594	0.000	-.093	.234
.02	.00	.003	.006	1.620	-.037	.354	*********	-.005	.008	.002	.324	.612	0.000	-.089	.235
.02	.00	.003	.005	1.871	-.015	.306	*********	-.004	.008	.002	.318	.650	0.000	-.080	.238
.01	.00	.002	.003	2.119	.026	.151	*********	-.004	.014	.002	.321	.672	0.000	-.075	.246
.01	.01	.002	.007	2.371	.056	.040	.713	-.004	.013	.002	.328	.659	0.000	-.078	.250
.01	.01	.002	.007	2.620	.063	-.008	-.122	-.004	.015	.003	.344	.635	0.000	-.083	.260
.00	.01	.002	.007	2.870	.065	-.060	-.916	-.003	.016	.002	.352	.618	0.000	-.087	.265
-.00	.01	.002	.007	3.119	.070	-.141	-2.013	-.003	.016	.003	.360	.612	0.000	-.089	.272
.00	.00	.002	.007	3.370	.072	-.203	-2.826	-.004	.014	.003	.368	.609	0.000	-.089	.279
-.00	.00	.002	.007	3.621	.070	-.272	-3.888	-.003	.015	.003	.377	.602	0.000	-.091	.286
.00	.01	.002	.009	3.871	.065	-.321	-4.928	-.003	.015	.003	.380	.602	0.000	-.091	.290
.00	.01	.003	.009	4.120	.054	-.364	*********	-.003	.013	.003	.385	.606	0.000	-.091	.294
.00	.01	.002	.009	4.371	.044	-.400	*********	-.003	.010	.003	.390	.608	0.000	-.090	.300
-.00	.01	.003	.008	4.620	.032	-.441	*********	-.002	.010	.003	.394	.624	0.000	-.086	.308
-.00	.01	.002	.009	4.872	.018	-.474	*********	-.001	.011	.003	.396	.628	0.000	-.085	.311

FORCE DATA FROM V41A-L5A AUGUST 1976 TUNNEL ENTRY AEDC-DR-76-82

GROUP	MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	P8,PSIA	T8,DEG(R)	Q8,PSIA	V8,FT/SEC	PREF,PSIA	ROLL,DEG
82	2.08	17.164	580.00	3.99	2.194	322.22	6.142	1759.2	.0034	45.00

PARENT CONFIG=UNKNOWN ALPHA(PAR)= 0.0

STORE CONFIG=UNKNOWN LP=*****

ALPHA (DEG)	YAW (DEG)	DX(IN)	DY(IN)	DZ(IN)	CN	CLM	CLM/CN	CY	CLN	CLL	CAT	PB(1)/PB	PB(2)/PB	CPB	CA
.01	.03	-.009	.023	.098	.452	-2.859	********	.244	-1.010	-.014	.896	.379	0.000	-.222	.674
.02	.02	-.009	.017	.252	.325	-2.463	********	.235	-.971	-.019	.877	.360	0.000	-.228	.648
.05	.03	-.009	.0[illegible]2	.505	.077	-1.525	********	.222	-.914	-.023	.896	.331	0.008	-.239	.657
.05	.03	-.008	.019	.752	-.071	-.841	********	.210	-.843	-.023	.876	.363	0.008	-.228	.648
.04	.02	-.009	.018	1.002	-.170	-.355	2.092	.189	-.766	-.022	.864	.395	0.000	-.216	.648
.02	.03	-.009	.020	1.250	-.215	-.118	.551	.156	-.639	-.021	.861	.417	0.000	-.208	.652
.04	.03	-.009	.022	1.501	-.311	.355	-1.142	.126	-.548	-.021	.875	.402	0.000	-.213	.662
.04	.03	-.008	.020	1.750	-.396	.798	-2.015	.102	-.449	-.017	.863	.425	0.000	-.205	.658
.03	.03	-.009	.021	1.999	-.445	1.098	-2.467	.074	-.338	-.016	.842	.443	0.000	-.199	.643
.03	.03	-.008	.022	2.249	-.456	1.245	-2.731	.050	-.202	-.015	.823	.469	0.000	-.190	.633
.02	.03	-.009	.020	2.499	-.447	1.323	-2.958	.021	-.069	-.012	.812	.496	0.000	-.180	.632
.01	.03	-.008	.017	2.748	-.418	1.318	-3.155	-.011	.074	-.009	.806	.502	0.000	-.178	.628
.01	.04	-.008	.024	2.998	-.385	1.274	-3.305	-.039	.211	-.007	.815	.497	0.000	-.180	.635
.01	.03	-.008	.023	3.249	-.347	1.213	-3.491	-.057	.303	-.004	.817	.485	0.000	-.184	.633
.01	.03	-.009	.023	3.497	-.282	1.052	-3.729	-.049	.360	-.003	.808	.485	0.000	-.184	.624
-.01	.02	-.010	.020	3.748	-.208	.809	-3.891	-.028	.223	-.018	.799	.498	0.000	-.179	.620
-.00	.02	-.008	.021	3.997	-.135	.572	-4.234	.019	.089	-.024	.797	.504	0.000	-.177	.620
-.01	.01	-.009	.019	4.246	-.051	.253	-4.938	.046	-.344	-.001	.795	.508	0.000	-.176	.620
-.00	.02	-.010	.020	4.497	.032	-.083	-2.551	.063	-.112	.009	.795	.511	0.000	-.178	.616
.00	.03	-.009	.024	4.748	.053	-.168	-3.151	.064	-.106	-.003	.812	.476	0.000	-.187	.625
.00	.02	-.010	.019	4.998	.071	-.248	-3.519	.070	-.149	-.003	.833	.437	0.000	-.201	.631
-.00	.02	-.009	.019	5.248	.081	-.323	-4.013	.074	-.185	-.003	.832	.427	0.000	-.205	.628
.01	.02	-.008	.019	5.498	.085	-.334	-3.927	.073	-.205	-.004	.846	.429	0.000	-.204	.642
.00	.02	-.009	.018	5.748	.090	-.375	-4.153	.074	-.219	-.004	.856	.426	0.000	-.205	.651
.00	.02	-.009	.017	5.997	.089	-.402	-4.502	.069	-.217	-.003	.862	.426	0.000	-.205	.657

FORCE DATA FROM V41A-M9A JAN-FEB 1977 TUNNEL ENTRY AEDC-DR-77-29

GROUP	MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	P8,PSIA	T8,DEG(R)	Q8,PSIA	V8,FT/SEC	PREF,PSIA	ROLL,DEG
514	1.63	18.770	583.50	5.01	4.223	379.00	7.855	1555.0	.8248	45.00

PARENT CONFIG=UNKNOWN   ALPHA(PAR)= 0.0

STORE CONFIG=UNKNOWN   LP=*****

ALPHA (DEG)	YAW (DEG)	DX(IN)	DY(IN)	DZ(IN)	CN	CLM	CLM/CN	CY	CLN	CLL	CAT	PB(1)/PB	PB(2)/PB	CPB	CA
.01	-.03	16.990	-1.520	2.999	.012	.009	.777	-.005	-.010	-.006	.681	.544	0.000	-.245	.436
.01	-.03	16.990	-1.517	1.503	.041	-.072	-1.760	-.004	.004	-.006	.683	.552	0.000	-.241	.442
.01	-.01	16.990	-1.507	.002	.065	-.130	-2.011	-.011	.029	-.005	.683	.551	0.000	-.242	.441
.00	-.01	16.990	-1.510	-1.497	.069	-.142	-2.053	-.014	.048	-.006	.690	.555	0.000	-.239	.451
.00	-.04	16.990	-1.526	-2.996	.067	-.154	-2.295	-.005	.020	-.004	.689	.559	0.000	-.237	.452
.01	-.01	16.990	-1.510	-4.494	.076	-.195	-2.578	-.000	-.011	-.004	.689	.569	0.000	-.232	.457
-.00	-.01	16.990	-1.518	-5.994	.069	-.167	-2.419	.003	-.011	-.005	.687	.568	0.000	-.232	.455
-.00	-.01	16.990	-1.5[illegible]8	-7.495	.040	-.065	-1.617	.001	.008	-.004	.690	.563	0.000	-.235	.455

FORCE DATA FROM V41A-T9A SEPT. 1977 TUNNEL ENTRY AEDC-DR-77-98

GROUP	MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	PB,PSIA	TB,DEG(R)	QB,PSIA	VB,FT/SEC	PREF,PSIA	ROLL,DEG
252	1.51	14.576	581.11	4.02	3.913	399.11	6.246	1479.3	.1480	-.02

PARENT CONFIG= NO PARENT　　ALPHA(PAR)= 0.0

STORE CONFIG=SCDC PHI=45. DEG.　　LP=*****

ALPHA (DEG)	YAW (DEG)	DX(IN)	DY(IN)	DZ(IN)	CN	CLM	CLM/CN	CY	CLN	CLL	CAT	PB(1)/PB	PB(2)/PB	CPB	CA
-25.96	.01	-.002	-.001	.005	-5.973	5.762	-.965	.072	-.048	.079	.716	.518	0.000	-.302	.414
-22.00	.00	-.003	.000	.007	-4.772	5.207	-1.091	.030	.031	.066	.690	.559	0.000	-.276	.414
-17.99	.01	-.003	.007	.006	-3.602	4.636	-1.287	.034	-.027	.014	.681	.593	0.000	-.255	.426
-14.00	.01	-.004	.006	.005	-2.592	3.973	-1.533	.033	-.075	.005	.684	.607	0.000	-.246	.438
-11.94	.03	-.002	.023	-.001	-2.148	3.460	-1.611	.037	-.086	.001	.683	.614	0.000	-.242	.442
-9.94	-.02	-.002	-.012	-.001	-1.722	2.884	-1.675	.037	-.389	-.008	.681	.610	0.000	-.245	.437
-7.96	.01	-.003	.002	-.001	-1.337	2.305	-1.723	.036	-.353	-.007	.690	.611	0.000	-.244	.446
-5.97	-.02	-.000	-.026	-.001	-.975	1.705	-1.750	.032	-.343	-.008	.694	.597	0.000	-.252	.442
-3.97	-.03	-.001	-.015	-.002	-.623	1.088	-1.746	.025	-.043	-.012	.702	.617	0.000	-.240	.462
-1.97	.04	-.001	.029	-.011	-.283	.449	-1.584	.022	-.045	-.013	.712	.609	0.000	-.245	.467
.01	-.02	-.002	-.021	-.005	.052	-.176	-3.399	.024	-.042	-.015	.708	.612	0.000	-.243	.465
2.02	.02	-.004	.008	-.005	.392	-.814	-2.078	.014	-.021	-.015	.698	.621	0.000	-.238	.460
4.02	.03	-.005	.022	-.005	.738	-1.466	-1.985	.018	-.034	-.016	.681	.630	0.000	-.232	.449
6.02	.02	-.004	.016	-.005	1.088	-2.115	-1.945	.014	-.011	-.020	.679	.613	0.000	-.242	.437
8.01	-.02	-.006	-.017	-.007	1.457	-2.747	-1.885	.006	.133	-.027	.672	.611	0.000	-.244	.428
10.02	.02	-.005	.007	-.007	1.855	-3.320	-1.790	-.008	.096	-.041	.663	.613	0.000	-.243	.420
12.04	.01	-.006	.007	-.008	2.271	-3.852	-1.697	-.012	.144	-.056	.662	.613	0.000	-.242	.420
14.04	.02	-.007	.012	-.008	2.718	-4.316	-1.588	-.045	.146	-.066	.669	.604	0.000	-.248	.421
7.99	.00	-.004	.009	-.003	3.787	-5.132	-1.355	-.012	.144	-.075	.671	.591	0.000	-.256	.414
22.00	.01	-.005	.008	-.004	4.932	-5.714	-1.158	.014	.100	-.085	.674	.584	0.000	-.260	.414
25.99	.01	-.006	.007	-.003	6.063	-6.216	-1.025	.044	.067	-.062	.685	.543	0.000	-.286	.399

FORCE DATA FROM V41A-V6A JAN-FEB 1978 ENTRY AEDC-TSP-78-V2

GROUP	MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	P8,PSIA	T8,DEG(R)	Q8,PSIA	V8,FT/SEC	PREF,PSIA	ROLL,DEG
314	1.63	14.200	580.67	3.79	3.195	379.18	5.943	1556.0	.4011	-.01

PARENT CONFIG= NO PARENT ALPHA(PAR)= 0.0

STORE CONFIG=SCOC PHI=45. DEG. LP=*****

ALPHA (DEG)	YAW (DEG)	DX(IN)	DY(IN)	DZ(IN)	CN	CLM	CLM/CN	CY	CLN	CLL	CAT	PB(1)/P8	PB(2)/P8	CPB	CA
-9.98	-.00	-.002	-.001	.002	-1.667	2.661	-1.596	.002	.004	-.001	.594	.591	.632	-.209	.385
-7.50	-.01	-.003	-.014	.006	-1.223	2.052	-1.678	-.002	.014	-.001	.603	.617	.629	-.203	.400
-5.09	.01	-.003	.010	.005	-.787	1.363	-1.732	-.006	.025	.000	.613	.633	.650	-.193	.420
-3.96	.01	-.002	.004	-.004	-.622	1.088	-1.751	-.007	.030	-.001	.606	.638	.655	-.190	.416
-2.96	.00	-.002	.003	-.005	-.456	.811	-1.780	-.009	.025	-.002	.612	.635	.658	-.198	.422
-1.97	.01	-.003	.005	-.016	-.299	.542	-1.814	-.009	.028	-.003	.613	.639	.654	-.190	.423
-.96	.01	-.004	.008	-.005	-.142	.271	-1.917	-.004	.024	-.004	.611	.632	.647	-.194	.417
.33	.00	-.003	.002	-.007	.010	.011	1.052	-.005	.015	-.007	.612	.627	.639	-.197	.415
1.03	.01	-.003	.004	-.008	.168	-.266	-1.581	-.005	.016	-.005	.605	.624	.632	-.200	.405
2.03	.01	-.004	.004	-.008	.332	-.553	-1.668	-.003	.017	-.004	.606	.624	.641	-.198	.408
3.03	.01	-.005	.015	-.009	.495	-.843	-1.702	-.007	.034	-.005	.597	.623	.639	-.198	.399
4.03	.01	-.005	.005	-.008	.660	-1.117	-1.692	-.009	.039	-.006	.599	.631	.639	-.196	.403
5.03	-.00	-.006	-.008	-.010	.832	-1.409	-1.694	-.011	.037	-.006	.597	.636	.630	-.197	.399
7.59	-.00	-.009	-.002	-.024	1.240	-2.081	-1.626	-.021	.068	-.007	.592	.640	.640	-.194	.398
9.99	.00	-.005	.002	-.003	1.731	-2.648	-1.530	-.019	.071	-.014	.575	.614	.611	-.208	.367

APPENDIX F

TRAJECTORY DATA RETRIEVAL PROGRAM

```
      PROGRAM TRAJ   (INPUT,OUTPUT,TAPE6=OUTPUT,TAPE1)                   TRAJ   1
      DIMENSION A(17),B(275,24)                                          TRAJ   2
      INTEGER C(20),D(20)                                                TRAJ   3
      DIMENSION NUMB(26,5),IPRCON(5),CONF(130)                           TRAJ   4
      DIMENSION NUMS(12,5),ISTCON(5),CONFS(60)                           TRAJ   5
      DO 102 I=1,5                                                       TRAJ   6
      DO 102 J=1,26                                                      TRAJ   7
  102 NUMB(J,I)=26                                                       TRAJ   8
      DO 110 I=1,5                                                       TRAJ   9
      DO 110 J=1,12                                                      TRAJ  10
  110 NUMS(J,I)=12                                                       TRAJ  11
      ISTCON(1)=4                                                        TRAJ  12
      ISTCON(2)=1                                                        TRAJ  13
      ISTCON(3)=2                                                        TRAJ  14
      ISTCON(4)=4                                                        TRAJ  15
      ISTCON(5)=11                                                       TRAJ  16
      NUMS(2,1)=5                                                        TRAJ  17
      NUMS(3,1)=3                                                        TRAJ  18
      NUMS(4,1)=4                                                        TRAJ  19
      NUMS(1,2)=4                                                        TRAJ  20
      NUMS(1,3)=1                                                        TRAJ  21
      NUMS(2,3)=2                                                        TRAJ  22
      NUMS(1,4)=1                                                        TRAJ  23
      NUMS(2,4)=3                                                        TRAJ  24
      NUMS(3,4)=5                                                        TRAJ  25
      NUMS(4,4)=2                                                        TRAJ  26
      NUMS(3,5)=1                                                        TRAJ  27
      NUMS(4,5)=2                                                        TRAJ  28
      NUMS(5,5)=3                                                        TRAJ  29
      NUMS(6,5)=6                                                        TRAJ  30
      NUMS(7,5)=7                                                        TRAJ  31
      NUMS(8,5)=8                                                        TRAJ  32
      NUMS(9,5)=9                                                        TRAJ  33
      NUMS(10,5)=10                                                      TRAJ  34
      NUMS(11,5)=11                                                      TRAJ  35
      CONFS(1)=4HSCDC                                                    TRAJ  36
      CONFS(2)=4H PHI                                                    TRAJ  37
      CONFS(3)=4H=45.                                                    TRAJ  38
      CONFS(4)=4H DEG                                                    TRAJ  39
      CONFS(5)=4H.                                                       TRAJ  40
      CONFS(6)=4HSP6C                                                    TRAJ  41
      CONFS(7)=4H PHI                                                    TRAJ  42
      CONFS(8)=4H=0.0                                                    TRAJ  43
      CONFS(9)=4H DEG                                                    TRAJ  44
      CONFS(10)=4H.                                                      TRAJ  45
      CONFS(11)=4HSLFN                                                   TRAJ  46
      CONFS(12)=4H PHI                                                   TRAJ  47
      CONFS(13)=4H=0.0                                                   TRAJ  48
      CONFS(14)=4H DEG                                                   TRAJ  49
      CONFS(15)=4H.                                                      TRAJ  50
      CONFS(16)=4HSLFF                                                   TRAJ  51
      CONFS(17)=4H PHI                                                   TRAJ  52
      CONFS(18)=4H=45.                                                   TRAJ  53
      CONFS(19)=4H DEG                                                   TRAJ  54
      CONFS(20)=4H.                                                      TRAJ  55
      CONFS(21)=4HCIRC                                                   TRAJ  56
      CONFS(22)=4HULAR                                                   TRAJ  57
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      CONFS(23)=4H PRE                                        TRAJ  58
      CONFS(24)=4HSS S                                        TRAJ  59
      CONFS(25)=4HTORE                                        TRAJ  60
      CONFS(26)=4HSTOC                                        TRAJ  61
      CONFS(27)=4H PHI                                        TRAJ  62
      CONFS(28)=4H=0.0                                        TRAJ  63
      CONFS(29)=4H DEG                                        TRAJ  64
      CONFS(30)=4H.                                           TRAJ  65
      CONFS(31)=4HSTOC                                        TRAJ  66
      CONFS(32)=4H PHI                                        TRAJ  67
      CONFS(33)=4H=60.                                        TRAJ  68
      CONFS(34)=4H DEG                                        TRAJ  69
      CONFS(35)=4H.                                           TRAJ  70
      CONFS(36)=4HSE P                                        TRAJ  71
      CONFS(37)=4HHI=0                                        TRAJ  72
      CONFS(38)=4H.0 D                                        TRAJ  73
      CONFS(39)=4HEG.                                         TRAJ  74
      CONFS(40)=4H                                            TRAJ  75
      CONFS(41)=4HSEP1                                        TRAJ  76
      CONFS(42)=4H                                            TRAJ  77
      CONFS(43)=4H                                            TRAJ  78
      CONFS(44)=4H                                            TRAJ  79
      CONFS(45)=4H                                            TRAJ  80
      CONFS(46)=4HSEP2                                        TRAJ  81
      CONFS(47)=4H                                            TRAJ  82
      CONFS(48)=4H                                            TRAJ  83
      CONFS(49)=4H                                            TRAJ  84
      CONFS(50)=4H                                            TRAJ  85
      CONFS(51)=4HSEP2                                        TRAJ  86
      CONFS(52)=4HN                                           TRAJ  87
      CONFS(53)=4H                                            TRAJ  88
      CONFS(54)=4H                                            TRAJ  89
      CONFS(55)=4H                                            TRAJ  90
      CONFS(56)=4HUNKN                                        TRAJ  91
      CONFS(57)=4HOWN                                         TRAJ  92
      CONFS(58)=4H                                            TRAJ  93
      CONFS(59)=4H                                            TRAJ  94
      CONFS(60)=4H                                            TRAJ  95
      IPPCON(1)=5                                             TRAJ  96
      IPPCON(2)=9                                             TRAJ  97
      IPPCON(3)=15                                            TRAJ  98
      IPPCON(4)=19                                            TRAJ  99
      IPPCON(5)=15                                            TRAJ 100
      NUMB(1,1)=1                                             TRAJ 101
      NUMB(2,1)=2                                             TRAJ 102
      NUMB(3,1)=3                                             TRAJ 103
      NUMB(4,1)=4                                             TRAJ 104
      NUMB(5,1)=5                                             TRAJ 105
      NUMB(20,1)=26                                           TRAJ 106
      NUMB(1,2)=1                                             TRAJ 107
      NUMB(2,2)=2                                             TRAJ 108
      NUMB(3,2)=4                                             TRAJ 109
      NUMB(4,2)=6                                             TRAJ 110
      NUMB(5,2)=7                                             TRAJ 111
      NUMB(6,2)=8                                             TRAJ 112
      NUMB(7,2)=3                                             TRAJ 113
      NUMB(8,2)=4                                             TRAJ 114
```

```
      NUMB(9,2)=5                                        TRAJ 115
      NUMB(20,2)=26                                      TRAJ 116
      NUMB(1,3)=1                                        TRAJ 117
      NUMB(2,3)=9                                        TRAJ 118
      NUMB(3,3)=10                                       TRAJ 119
      NUMB(4,3)=11                                       TRAJ 120
      NUMB(5,3)=12                                       TRAJ 121
      NUMB(6,3)=13                                       TRAJ 122
      NUMB(7,3)=2                                        TRAJ 123
      NUMB(8,3)=14                                       TRAJ 124
      NUMB(9,3)=15                                       TRAJ 125
      NUMB(10,3)=16                                      TRAJ 126
      NUMB(11,3)=3                                       TRAJ 127
      NUMB(12,3)=17                                      TRAJ 128
      NUMB(13,3)=7                                       TRAJ 129
      NUMB(14,3)=4                                       TRAJ 130
      NUMB(15,3)=8                                       TRAJ 131
      NUMB(20,3)=26                                      TRAJ 132
      NUMB(1,4)=11                                       TRAJ 133
      NUMB(2,4)=18                                       TRAJ 134
      NUMB(3,4)=19                                       TRAJ 135
      NUMB(4,4)=12                                       TRAJ 136
      NUMB(5,4)=20                                       TRAJ 137
      NUMB(6,4)=21                                       TRAJ 138
      NUMB(7,4)=13                                       TRAJ 139
      NUMB(8,4)=16                                       TRAJ 140
      NUMB(9,4)=15                                       TRAJ 141
      NUMB(10,4)=14                                      TRAJ 142
      NUMB(11,4)=10                                      TRAJ 143
      NUMB(12,4)=9                                       TRAJ 144
      NUMB(13,4)=17                                      TRAJ 145
      NUMB(14,4)=2                                       TRAJ 146
      NUMB(15,4)=3                                       TRAJ 147
      NUMB(16,4)=4                                       TRAJ 148
      NUMB(17,4)=8                                       TRAJ 149
      NUMB(18,4)=7                                       TRAJ 150
      NUMB(19,4)=1                                       TRAJ 151
      NUMB(20,4)=26                                      TRAJ 152
      NUMB(1,5)=1                                        TRAJ 153
      NUMB(2,5)=18                                       TRAJ 154
      NUMB(3,5)=11                                       TRAJ 155
      NUMB(4,5)=23                                       TRAJ 156
      NUMB(5,5)=16                                       TRAJ 157
      NUMB(6,5)=13                                       TRAJ 158
      NUMB(7,5)=24                                       TRAJ 159
      NUMB(8,5)=3                                        TRAJ 160
      NUMB(9,5)=4                                        TRAJ 161
      NUMB(10,5)=2                                       TRAJ 162
      NUMB(11,5)=20                                      TRAJ 163
      NUMB(12,5)=25                                      TRAJ 164
      NUMB(13,5)=19                                      TRAJ 165
      NUMB(14,5)=14                                      TRAJ 166
      NUMB(15,5)=12                                      TRAJ 167
      NUMB(20,5)=26                                      TRAJ 168
      CONF(1)=4H NO                                      TRAJ 169
      CONF(2)=4HPARE                                     TRAJ 170
      CONF(3)=4HNT                                       TRAJ 171
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      CONF(4)=4H                                                        TRAJ 172
      CONF(5)=4H                                                        TRAJ 173
      CONF(6)=4HN1-B                                                    TRAJ 174
      CONF(7)=4H2-W                                                     TRAJ 175
      CONF(8)=4H                                                        TRAJ 176
      CONF(9)=4H                                                        TRAJ 177
      CONF(10)=4H                                                       TRAJ 178
      CONF(11)=4HN1-B                                                   TRAJ 179
      CONF(12)=4H2-W-                                                   TRAJ 180
      CONF(13)=4H(P2)                                                   TRAJ 181
      CONF(14)=4HC                                                      TRAJ 182
      CONF(15)=4H                                                       TRAJ 183
      CONF(16)=4HN1-B                                                   TRAJ 184
      CONF(17)=4H2-W-                                                   TRAJ 185
      CONF(18)=4H(P2)                                                   TRAJ 186
      CONF(19)=4H1/3                                                    TRAJ 187
      CONF(20)=4H                                                       TRAJ 188
      CONF(21)=4HN1-B                                                   TRAJ 189
      CONF(22)=4H2-W-                                                   TRAJ 190
      CONF(23)=4H(P2)                                                   TRAJ 191
      CONF(24)=4H2/3                                                    TRAJ 192
      CONF(25)=4H                                                       TRAJ 193
      CONF(26)=4HN1-B                                                   TRAJ 194
      CONF(27)=4H2-W-                                                   TRAJ 195
      CONF(28)=4H(P2)                                                   TRAJ 196
      CONF(29)=4H1/3-                                                   TRAJ 197
      CONF(30)=4HS                                                      TRAJ 198
      CONF(31)=4HN1-B                                                   TRAJ 199
      CONF(32)=4H2-W-                                                   TRAJ 200
      CONF(33)=4H(P2)                                                   TRAJ 201
      CONF(34)=4H1/3T                                                   TRAJ 202
      CONF(35)=4HS2S3                                                   TRAJ 203
      CONF(36)=4HN1-B                                                   TRAJ 204
      CONF(37)=4H2-W-                                                   TRAJ 205
      CONF(38)=4H(P2)                                                   TRAJ 206
      CONF(39)=4H1/3-                                                   TRAJ 207
      CONF(40)=4HT                                                      TRAJ 208
      CONF(41)=4HN1-B                                                   TRAJ 209
      CONF(42)=4H1                                                      TRAJ 210
      CONF(43)=4H                                                       TRAJ 211
      CONF(44)=4H                                                       TRAJ 212
      CONF(45)=4H                                                       TRAJ 213
      CONF(46)=4HN3-B                                                   TRAJ 214
      CONF(47)=4H1-A3                                                   TRAJ 215
      CONF(48)=4H                                                       TRAJ 216
      CONF(49)=4H                                                       TRAJ 217
      CONF(50)=4H                                                       TRAJ 218
      CONF(51)=4HN3-B                                                   TRAJ 219
      CONF(52)=4H2-W-                                                   TRAJ 220
      CONF(53)=4HA4                                                     TRAJ 221
      CONF(54)=4H                                                       TRAJ 222
      CONF(55)=4H                                                       TRAJ 223
      CONF(56)=4HN3-B                                                   TRAJ 224
      CONF(57)=4H2-W-                                                   TRAJ 225
      CONF(58)=4HA5                                                     TRAJ 226
      CONF(59)=4H                                                       TRAJ 227
      CONF(60)=4H                                                       TRAJ 228
```

```
      CONF(61)=4HN3-B                                                TRAJ 229
      CONF(62)=4H2-W-                                                TRAJ 230
      CONF(63)=4HA3                                                  TRAJ 231
      CONF(64)=4H                                                    TRAJ 232
      CONF(65)=4H                                                    TRAJ 233
      CONF(66)=4HN1-B                                                TRAJ 234
      CONF(67)=4H2-W-                                                TRAJ 235
      CONF(68)=4HP3-1                                                TRAJ 236
      CONF(69)=4H/3                                                  TRAJ 237
      CONF(70)=4H                                                    TRAJ 238
      CONF(71)=4HN3-B                                                TRAJ 239
      CONF(72)=4H2-W-                                                TRAJ 240
      CONF(73)=4HA3-P                                                TRAJ 241
      CONF(74)=4H3-1/                                                TRAJ 242
      CONF(75)=4H3                                                   TRAJ 243
      CONF(76)=4HN3-B                                                TRAJ 244
      CONF(77)=4H2-W-                                                TRAJ 245
      CONF(78)=4HA3-(                                                TRAJ 246
      CONF(79)=4HP2)-                                                TRAJ 247
      CONF(80)=4HC                                                   TRAJ 248
      CONF(81)=4HN1-B                                                TRAJ 249
      CONF(82)=4H2-W-                                                TRAJ 250
      CONF(83)=4H(P3)                                                TRAJ 251
      CONF(84)=4H- 2/                                                TRAJ 252
      CONF(85)=4H3                                                   TRAJ 253
      CONF(86)=4HN3-B                                                TRAJ 254
      CONF(87)=4H2-W-                                                TRAJ 255
      CONF(88)=4HA4-(                                                TRAJ 256
      CONF(89)=4HP2)-                                                TRAJ 257
      CONF(90)=4HC                                                   TRAJ 258
      CONF(91)=4HN3-B                                                TRAJ 259
      CONF(92)=4H2-W-                                                TRAJ 260
      CONF(93)=4HA4-(                                                TRAJ 261
      CONF(94)=4HP3)-                                                TRAJ 262
      CONF(95)=4H1/3                                                 TRAJ 263
      CONF(96)=4HN3-B                                                TRAJ 264
      CONF(97)=4H2-W-                                                TRAJ 265
      CONF(98)=4HA5-(                                                TRAJ 266
      CONF(99)=4HP2)-                                                TRAJ 267
      CONF(100)=4HC                                                  TRAJ 268
      CONF(101)=4HN3-B                                               TRAJ 269
      CONF(102)=4H2-W-                                               TRAJ 270
      CONF(103)=4HA5-(                                               TRAJ 271
      CONF(104)=4HP3)-                                               TRAJ 272
      CONF(105)=4H1/3                                                TRAJ 273
      CONF(106)=4H                                                   TRAJ 274
      CONF(107)=4H                                                   TRAJ 275
      CONF(108)=4H                                                   TRAJ 276
      CONF(109)=4H                                                   TRAJ 277
      CONF(110)=4H                                                   TRAJ 278
      CONF(111)=4HN3-B                                               TRAJ 279
      CONF(112)=4H2-W-                                               TRAJ 280
      CONF(113)=4HA4-F                                               TRAJ 281
      CONF(114)=4H                                                   TRAJ 282
      CONF(115)=4H                                                   TRAJ 283
      CONF(116)=4HN3-B                                               TRAJ 284
      CONF(117)=4H2-W-                                               TRAJ 285
```

```
      CONF(118)=4HA3-F                                                  TRAJ 286
      CONF(119)=4H                                                      TRAJ 287
      CONF(120)=4H                                                      TRAJ 288
      CONF(121)=4HN3-B                                                  TRAJ 289
      CONF(122)=4H2-W-                                                  TRAJ 290
      CONF(123)=4HA5-F                                                  TRAJ 291
      CONF(124)=4H                                                      TRAJ 292
      CONF(125)=4H                                                      TRAJ 293
      CONF(126)=4HUNKN                                                  TRAJ 294
      CONF(127)=4HOWN                                                   TRAJ 295
      CONF(128)=4H                                                      TRAJ 296
      CONF(129)=4H                                                      TRAJ 297
      CONF(130)=4H                                                      TRAJ 298
      IPRINT=0                                                          TRAJ 299
      ICOUNT=0                                                          TRAJ 300
      READ(1,12) (C(I),I=1,20)                                          TRAJ 301
      READ 14,INUM,IENTRY                                               TRAJ 302
      READ 14,(D(I),I=1,INUM)                                           TRAJ 303
    9 READ(1,1) (A(I),I=1,17)                                           TRAJ 304
      IF(EOF(1)) 2,3                                                    TRAJ 305
    3 M=A(2)                                                            TRAJ 306
      IF(A(7).LT.0.25.OR.A(7).GT.3.50) A(7)=9999.                       TRAJ 307
      IF(A(7).GT.0.25.AND.A(7).LT.1.50) A(7)=0.81                       TRAJ 308
      IF(A(7).GT.1.50.AND.A(7).LT.2.50) A(7)=1.63                       TRAJ 309
      IF(A(7).GT.2.50.AND.A(7).LT.3.50) A(7)=3.25                       TRAJ 310
      IPAGE=1                                                           TRAJ 311
      IGROUP=A(1)                                                       TRAJ 312
      DO 6 I=1,M                                                        TRAJ 313
      READ(1,1) (B(I,J),J=1,10)                                         TRAJ 314
      READ(1,1) (B(I,J),J=11,20)                                        TRAJ 315
    6 READ(1,1) (B(I,J),J=21,24)                                        TRAJ 316
      DO 15 I=1,INUM                                                    TRAJ 317
      IF(IGROUP.EQ.D(I)) IPRINT=1                                       TRAJ 318
   15 CONTINUE                                                          TRAJ 319
      IF (IPRINT.EQ.0) GO TO 9                                          TRAJ 320
      ICOUNT=ICOUNT+1                                                   TRAJ 321
      RE=A(15)*.000001                                                  TRAJ 322
      TT=A(3)                                                           TRAJ 323
      ALP=B(1,5)                                                        TRAJ 324
      ICONFG=A(4)                                                       TRAJ 325
      IDX=22                                                            TRAJ 326
      IL=IPRCON(IENTRY)                                                 TRAJ 327
      DO 101 I=1,IL                                                     TRAJ 328
      IF(ICONFG.EQ.I) IDX=I                                             TRAJ 329
  101 CONTINUE                                                          TRAJ 330
      IDXX=NUMB(IDX,IENTRY)                                             TRAJ 331
      IDXX=(5*IDXX+1)-5                                                 TRAJ 332
      ICONFS=A(5)                                                       TRAJ 333
      IDXS=12                                                           TRAJ 334
      IL=ISTCON(IENTRY)                                                 TRAJ 335
      DO 112 I=1,IL                                                     TRAJ 336
      IF(ICONFS.EQ.I) IDXS=I                                            TRAJ 337
  112 CONTINUE                                                          TRAJ 338
      IDXS=NUMS(IDXS,IENTRY)                                            TRAJ 339
      IDXS=(5*IDXS+1)-5                                                 TRAJ 340
   20 IN=(IPAGE-1)*45+1                                                 TRAJ 341
      IL=IPAGE*45                                                       TRAJ 342
```

```
      IF(IL.GT.M) IL=M
      WRITE(6,13) (C(I),I=1,20)
      WRITE(6,7) IGROUP,IPAGE
      IPAGE=IPAGE+1
      WRITE(6,4)
      WRITE(6,5)        (A(I),I=8,10),RE,A(11),A(13),A(12),A(14),IT,
     1A(16),A(17)
      INIDXX=IDXX+4
      INIDXS=IDXS+4
      WRITE (6,16) (CONF(I),I=IDXX,INIDXX),ALP
      WRITE(6,17) (CONFS(I),I=IDXS,INIDXS),A(7)
      WRITE(6,18)
      WRITE(6,19)
      DO 10 I=IN,IL
   10 WRITE(6,11) (B(I,J),J=1,15),B(I,23),B(I,24)
      IF(IL.NE.M) GO TO 20
      IPRINT=0
      IF(ICOUNT.EQ.INUM) GO TO 2
      GO TO 9
    2 STOP
    1 FORMAT(10E12.4)
    4 FORMAT(/,           2X,4HMACH,2X,7HPO,PSIA,2X,
     19HTO,DEG(R),2X,11HRE/FT*10**6,2X,7HPB,PSIA,2X,
     29HTB,DEG(R),2X,7HQB,PSIA,2X,9HVB,FT/SEC,1X,
     315HTRAJECTORY CODE,5X,2HVA,6X,4HRHOS)
    5 FORMAT(1X,   F5.2,F9.3,F10.2,F11.2,F11.3,F11.2,F10.3,
     1F10.1,7X,I2,F17.2,1X,1PE10.3)
    7 FORMAT(/,1X,5HGROUP,I5,2X,4HPAGE,I3)
   11 FORMAT(1X,F5.3,6F7.2,6F7.3,F9.2,F8.1,F8.2,F7.2)
   12 FORMAT(20A4)
   13 FORMAT(1H1,1X,20A4)
   14 FORMAT(16I5)
   16 FORMAT(/,1X,14HPARENT CONFIG ,5A4,5X,11HALPHA(PAR)=,F5.1)
   17 FORMAT(/,1X,14HSTORE  CONFIG ,5A4,5X,3HLP=,F5.2)
   18 FORMAT(/,2X,4HTIME,5X,1HX,6X,1HY,6X,1HZ,3X,6HALPHAP,2X,5HYAW2P,
     A2X,3HPHI,5X,2HCN,4X,3HCLM,5X,2HCY,4X,3HCLN,4X,3HCLL,4X,3HCAT,
     B6X,2HQS,6X,2HVS,5X,6HALPHAK,2X,4HYAWK)
   19 FORMAT(3X,3HSEC,4X,3HFT.,4X,3HFT.,4X,3HFT.,3X,4HDEG.,4X,4HDEG.,
     A2X,4HDEG.,47X,3HPSF,3X,6HFT/SEC,4X,4HDEG.,4X,4HDEG.)
      END
```

AD-A083 848 NIELSEN ENGINEERING AND RESEARCH INC MOUNTAIN VIEW CALIF F/G 20/4
DATA REPORT FOR AN EXTENSIVE STORE SEPARATION TEST PROGRAM COND--ETC(U)
DEC 79 F K GOODWIN, C L DYER F33615-76-C-3077
UNCLASSIFIED NEAR-TR-205 AFFDL-TR-79-3130 NL

4 OF 4

END
DATE
FILMED
6-80
DTIC

CAPTIVE TRAJECTORY DATA FROM V41A-T3A SEPTEMBER ENTRY AEDC-DR-77-98

GROUP 291 PAGE 1

MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	PA,PSIA	TA,DEG(R)	QA,PSIA	VA,FT/SEC	TRAJECTORY CODE	VA	RHOS
1.51	14.614	580.31	4.03	3.924	398.56	6.262	1478.3	4	1462.20	5.925E-04

PARENT CONFIG N3-B2-W-A4-(P2)-1/3   ALPHA(PAR)= 5.0

STORE CONFIG SCOC PHI=45. DEG.   LP= .81

TIME SEC	X FT.	Y FT.	Z FT.	ALPHAP DEG.	YAW2P DEG.	PHI DEG.	CN	CLM	CY	CLN	CLL	CAT	QS PSF	VS FT/SEC	ALPHAK DEG.	YAWK DEG.
0.000	0.00	0.00	0.00	5.01	-.00	-.00	.852	-3.590	-.256	-2.440	.248	.740	******	******	******	******
.006	-.00	-.00	.00	5.00	-.01	.01	.858	-3.607	-.208	-2.532	.252	.748	634.52	1459.7	.01	-.00
.010	-.00	-.00	.00	5.00	-.01	.03	.854	-3.586	-.217	-2.492	.252	.751	636.01	1459.7	.01	-.00
.014	-.00	-.00	.00	4.99	-.02	.06	.854	-3.618	-.222	-2.505	.256	.751	638.05	1464.3	.02	-.00
.018	-.00	-.00	.01	4.98	-.03	.11	.865	-3.630	-.216	-2.501	.245	.746	637.35	1464.4	.03	-.00
.022	-.00	-.00	.01	4.97	-.05	.16	.864	-3.622	-.217	-2.468	.243	.737	635.18	1459.6	.05	-.00
.026	-.01	-.00	.02	4.96	-.07	.23	.858	-3.645	-.225	-2.479	.249	.745	635.41	1459.6	.06	-.00
.030	-.01	-.00	.02	4.95	-.09	.30	.866	-3.625	-.233	-2.478	.252	.749	635.62	1462.7	.07	-.01
.034	-.01	-.00	.03	4.94	-.12	.39	.873	-3.636	-.236	-2.406	.231	.738	638.71	1464.0	.09	-.01
.038	-.01	-.00	.04	4.94	-.15	.49	.878	-3.658	-.246	-2.360	.214	.736	636.75	1462.3	.10	-.01
.042	-.02	-.00	.05	4.94	-.18	.59	.880	-3.663	-.248	-2.314	.202	.730	636.22	1458.0	.12	-.01
.046	-.02	-.00	.06	4.93	-.21	.71	.885	-3.688	-.261	-2.306	.207	.733	635.46	1462.3	.13	-.01
.050	-.02	-.01	.08	4.93	-.25	.83	.886	-3.705	-.266	-2.246	.190	.728	634.90	1458.7	.15	-.01
.054	-.03	-.01	.09	4.93	-.29	.96	.886	-3.702	-.273	-2.202	.187	.720	637.41	1461.6	.16	-.01
.058	-.03	-.01	.11	4.93	-.33	1.10	.888	-3.711	-.284	-2.178	.179	.717	637.38	1458.8	.17	-.01
.062	-.03	-.01	.13	4.93	-.38	1.25	.892	-3.735	-.292	-2.141	.172	.713	639.77	1465.0	.18	-.01
.066	-.04	-.01	.15	4.93	-.43	1.41	.888	-3.753	-.304	-2.093	.163	.720	636.74	1460.7	.19	-.01
.070	-.04	-.01	.16	4.93	-.48	1.57	.882	-3.741	-.315	-2.029	.144	.707	637.35	1462.5	.20	-.01
.074	-.05	-.01	.19	4.92	-.53	1.74	.886	-3.763	-.327	-1.984	.145	.718	636.40	1460.3	.21	-.02
.078	-.05	-.01	.21	4.92	-.59	1.92	.878	-3.740	-.342	-1.919	.129	.707	636.86	1462.8	.22	-.02
.082	-.06	-.02	.23	4.91	-.65	2.10	.871	-3.748	-.356	-1.869	.119	.709	635.56	1462.6	.22	-.02
.086	-.06	-.02	.25	4.90	-.71	2.28	.863	-3.735	-.372	-1.795	.104	.704	634.38	1458.4	.22	-.02
.090	-.07	-.02	.27	4.88	-.78	2.47	.855	-3.728	-.387	-1.736	.096	.706	636.76	1462.4	.22	-.02
.094	-.08	-.02	.30	4.86	-.84	2.67	.839	-3.680	-.403	-1.658	.079	.704	635.62	1460.8	.23	-.02
.098	-.08	-.02	.32	4.83	-.91	2.87	.829	-3.656	-.424	-1.597	.067	.706	635.81	1460.1	.23	-.02
.106	-.10	-.03	.37	4.76	-1.06	3.27	.806	-3.608	-.457	-1.482	.047	.711	636.53	1463.3	.24	-.02
.114	-.11	-.03	.41	4.67	-1.21	3.69	.772	-3.487	-.493	-1.353	.021	.706	634.39	1458.0	.24	-.03
.122	-.13	-.04	.46	4.57	-1.37	4.10	.737	-3.396	-.533	-1.243	.001	.703	636.76	1462.4	.25	-.03
.130	-.14	-.05	.51	4.44	-1.54	4.52	.691	-3.242	-.563	-1.111	-.013	.693	635.15	1456.7	.25	-.03
.138	-.16	-.05	.56	4.31	-1.72	4.93	.652	-3.150	-.598	-.991	-.025	.686	638.38	1464.2	.26	-.04
.146	-.18	-.06	.61	4.15	-1.90	5.34	.609	-3.041	-.633	-.884	-.034	.682	634.99	1458.8	.26	-.04
.154	-.20	-.07	.67	3.98	-2.09	5.74	.564	-2.901	-.675	-.754	-.047	.674	634.54	1460.1	.27	-.04
.162	-.22	-.08	.72	3.80	-2.29	6.14	.517	-2.766	-.710	-.631	-.058	.671	634.56	1460.1	.28	-.05
.170	-.25	-.09	.78	3.61	-2.49	6.52	.483	-2.683	-.740	-.530	-.064	.672	634.47	1460.1	.28	-.05
.178	-.27	-.10	.83	3.40	-2.69	6.90	.423	-2.538	-.780	-.404	-.075	.670	634.24	1460.3	.29	-.05
.186	-.29	-.11	.89	3.17	-2.89	7.26	.365	-2.364	-.815	-.282	-.088	.667	633.81	1460.3	.30	-.06
.194	-.32	-.12	.95	2.94	-3.10	7.60	.301	-2.167	-.845	-.169	-.102	.662	633.24	1455.5	.31	-.06
.202	-.35	-.13	1.01	2.69	-3.32	7.93	.231	-1.975	-.883	-.056	-.117	.660	631.60	1455.8	.31	-.07
.210	-.37	-.15	1.07	2.44	-3.53	8.24	.173	-1.772	-.919	.038	-.133	.666	634.70	1463.5	.32	-.07
.218	-.40	-.16	1.14	2.17	-3.74	8.53	.096	-1.573	-.944	.138	-.145	.665	631.11	1458.3	.33	-.08
.226	-.43	-.18	1.20	1.90	-3.96	8.79	.038	-1.393	-.983	.227	-.156	.659	631.88	1458.3	.34	-.08
.234	-.46	-.20	1.27	1.62	-4.18	9.03	-.034	-1.168	-1.013	.327	-.166	.665	632.56	1456.0	.35	-.09
.242	-.49	-.22	1.34	1.34	-4.39	9.23	-.098	-.992	-1.046	.433	-.174	.672	635.17	1460.1	.36	-.09
.250	-.53	-.24	1.41	1.04	-4.60	9.41	-.163	-.787	-1.078	.533	-.181	.677	636.39	1460.6	.37	-.10
.258	-.56	-.26	1.49	.75	-4.81	9.56	-.224	-.616	-1.113	.639	-.185	.685	634.51	1458.6	.38	-.11

CAPTIVE TRAJECTORY DATA FROM V41A-T9A SEPTEMBER ENTRY AEDC-DR-77-98

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MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	PB,PSIA	TB,DEG(R)	QB,PSIA	VB,FT/SEC	TRAJECTORY CODE	VA	RHOS
1.51	14.614	588.31	4.03	3.924	398.56	6.262	1478.3	4	1462.20	5.925E-04

PARENT CONFIG N3-32-W-A4-(P1)-1/3   ALPHA(PAR)= 5.0

STORE CONFIG SCDC PHI=45. DEG.   LP= .81

TIME SEC	X FT.	Y FT.	Z FT.	ALPHAP DEG.	YAW2P DEG.	PHI DEG.	CN	CLM	CY	CLN	CLL	CAT	QS PSF	VS FT/SEC	ALPHAK DEG.	YAWK DEG.
.266	-.60	-.28	1.56	.45	-5.02	9.67	-.287	-.441	-1.131	.777	-.173	.689	634.52	1458.9	.39	-.11
.274	-.63	-.30	1.64	.15	-5.23	9.75	-.347	-.312	-1.139	.934	-.153	.689	634.15	1460.7	.40	-.12
.278	-.65	-.32	1.68	-.01	-5.33	9.78	-.373	-.228	-1.149	.974	-.161	.696	633.82	1461.4	.41	-.12
.282	-.67	-.33	1.72	-.16	-5.43	9.81	-.399	-.164	-1.154	1.001	-.162	.693	631.22	1454.5	.41	-.13
.286	-.69	-.34	1.76	-.31	-5.53	9.82	-.431	-.067	-1.166	1.062	-.163	.688	634.50	1459.7	.42	-.13
.290	-.71	-.36	1.80	-.46	-5.62	9.83	-.464	.003	-1.175	1.112	-.162	.691	633.24	1456.9	.43	-.13
.294	-.73	-.37	1.84	-.62	-5.72	9.83	-.496	.081	-1.198	1.179	-.163	.695	634.37	1460.5	.43	-.14
.298	-.75	-.38	1.89	-.77	-5.82	9.83	-.510	.112	-1.207	1.201	-.162	.690	632.28	1456.7	.44	-.14
.302	-.77	-.40	1.93	-.93	-5.91	9.82	-.550	.210	-1.228	1.302	-.162	.691	633.56	1458.3	.44	-.15
.306	-.79	-.41	1.97	-1.08	-6.00	9.80	-.573	.272	-1.247	1.356	-.164	.696	633.29	1458.1	.45	-.15
.310	-.81	-.43	2.02	-1.23	-6.09	9.77	-.609	.346	-1.274	1.437	-.167	.703	633.16	1459.6	.46	-.15
.314	-.83	-.44	2.06	-1.39	-6.18	9.74	-.634	.432	-1.296	1.517	-.170	.707	631.68	1456.6	.46	-.16
.318	-.85	-.46	2.11	-1.54	-6.26	9.70	-.667	.508	-1.312	1.579	-.171	.710	632.69	1458.4	.47	-.16
.322	-.88	-.48	2.15	-1.69	-6.35	9.65	-.696	.594	-1.330	1.641	-.171	.711	632.14	1458.1	.47	-.16
.330	-.92	-.51	2.25	-2.00	-6.51	9.53	-.770	.786	-1.356	1.742	-.169	.715	631.73	1455.9	.49	-.17
.338	-.97	-.55	2.34	-2.30	-6.66	9.38	-.848	.996	-1.373	1.829	-.166	.715	633.09	1459.8	.50	-.18
.346	-1.01	-.59	2.44	-2.60	-6.80	9.21	-.932	1.234	-1.384	1.875	-.164	.720	630.94	1456.1	.52	-.19
.354	-1.06	-.63	2.54	-2.90	-6.93	9.06	-1.012	1.467	-1.394	1.928	-.160	.724	631.89	1456.3	.53	-.20
.362	-1.11	-.67	2.65	-3.18	-7.05	8.77	-1.093	1.695	-1.394	1.973	-.153	.718	632.51	1455.5	.55	-.21
.370	-1.17	-.71	2.76	-3.47	-7.16	8.50	-1.163	1.865	-1.406	2.010	-.147	.724	633.75	1461.0	.56	-.22
.378	-1.22	-.75	2.87	-3.74	-7.26	8.21	-1.237	2.091	-1.382	2.000	-.129	.718	633.51	1456.8	.58	-.23
.386	-1.27	-.80	2.98	-4.01	-7.35	7.90	-1.293	2.211	-1.380	2.002	-.117	.718	633.35	1460.3	.59	-.23
.394	-1.33	-.85	3.10	-4.26	-7.42	7.57	-1.331	2.296	-1.364	1.961	-.104	.718	630.02	1455.5	.61	-.24
.402	-1.39	-.90	3.22	-4.51	-7.48	7.22	-1.352	2.333	-1.350	1.906	-.095	.717	630.69	1456.6	.63	-.25
.410	-1.45	-.95	3.34	-4.74	-7.54	6.85	-1.367	2.337	-1.342	1.869	-.082	.712	630.32	1455.5	.65	-.26
.418	-1.51	-1.01	3.47	-4.96	-7.58	6.46	-1.396	2.403	-1.356	1.912	-.081	.708	630.73	1455.6	.66	-.27
.426	-1.57	-1.06	3.60	-5.18	-7.61	6.06	-1.422	2.481	-1.366	1.963	-.078	.708	632.94	1455.9	.68	-.28
.434	-1.64	-1.12	3.73	-5.38	-7.63	5.65	-1.455	2.574	-1.389	2.037	-.071	.713	632.75	1457.2	.70	-.29
.442	-1.70	-1.18	3.87	-5.57	-7.63	5.22	-1.479	2.626	-1.420	2.146	-.065	.721	631.32	1456.4	.72	-.29
.450	-1.77	-1.24	4.01	-5.75	-7.63	4.78	-1.475	2.600	-1.458	2.287	-.061	.716	630.48	1455.9	.73	-.30
.458	-1.84	-1.30	4.16	-5.91	-7.61	4.32	-1.468	2.555	-1.485	2.398	-.068	.718	629.94	1453.6	.75	-.31
.462	-1.87	-1.33	4.23	-5.99	-7.60	4.09	-1.469	2.538	-1.489	2.402	-.062	.723	632.88	1455.9	.76	-.32
.466	-1.91	-1.36	4.31	-6.06	-7.58	3.86	-1.483	2.574	-1.498	2.435	-.057	.729	632.19	1459.0	.77	-.32
.470	-1.94	-1.40	4.38	-6.14	-7.56	3.62	-1.491	2.605	-1.499	2.447	-.052	.732	628.72	1454.9	.78	-.32
.474	-1.98	-1.43	4.46	-6.20	-7.54	3.38	-1.488	2.614	-1.486	2.428	-.047	.729	628.79	1451.6	.79	-.33
.478	-2.02	-1.46	4.53	-6.27	-7.51	3.14	-1.512	2.688	-1.502	2.462	-.042	.739	631.63	1457.7	.80	-.33
.482	-2.05	-1.50	4.61	-6.33	-7.48	2.89	-1.513	2.702	-1.487	2.450	-.039	.736	629.09	1452.5	.81	-.34
.490	-2.13	-1.57	4.77	-6.45	-7.41	2.40	-1.522	2.745	-1.483	2.453	-.035	.745	630.89	1455.7	.83	-.35
.498	-2.21	-1.64	4.93	-6.55	-7.33	1.90	-1.528	2.764	-1.473	2.436	-.033	.749	629.82	1455.0	.85	-.36
.506	-2.29	-1.71	5.10	-6.64	-7.23	1.39	-1.526	2.797	-1.458	2.411	-.030	.748	629.21	1454.2	.86	-.36
.514	-2.37	-1.79	5.27	-6.71	-7.12	.87	-1.532	2.832	-1.450	2.406	-.029	.754	629.12	1453.0	.88	-.37
.522	-2.45	-1.86	5.44	-6.77	-7.00	.34	-1.535	2.871	-1.440	2.406	-.027	.753	629.98	1454.0	.90	-.38
.530	-2.53	-1.94	5.62	-6.82	-6.86	-.19	-1.541	2.901	-1.436	2.416	-.029	.757	629.85	1456.5	.92	-.39
.546	-2.71	-2.10	5.98	-6.96	-6.56	-1.27	-1.526	2.934	-1.404	2.394	-.023	.759	627.26	1451.2	.96	-.40
.562	-2.89	-2.27	6.35	-6.95	-6.21	-2.38	-1.506	2.926	-1.368	2.358	-.026	.751	628.96	1453.3	1.00	-.42

CAPTIVE TRAJECTORY DATA FROM V41A-T9A SEPTEMBER ENTRY AEDC-DR-77-96

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MACH	PO,PSIA	TO,DEG(R)	RE/FT*10**6	PA,PSIA	TA,DEG(R)	QA,PSIA	VA,FT/SEC	TRAJECTORY CODE	VA	RHOS
1.51	14.614	580.31	4.03	3.924	398.56	6.262	1478.3	4	1462.20	5.925E-04

PARENT CONFIG N5-B2-W-A4-(P3)-1/3 ALPHA(PAR)= 5.0

STORE CONFIG SCOC PHI=45. DEG. LP= .81

TIME SEC	X FT.	Y FT.	Z FT.	ALPHAP DEG.	YAW2P DEG.	PHI DEG.	CN	CLM	CY	CLN	CLL	CAT	QS PSF	VS FT/SEC	ALPHAK DEG.	YAWK DEG.
.578	-3.07	-2.44	6.76	-6.77	-5.81	-3.51	-1.467	2.887	-1.329	2.311	-.021	.740	628.61	1452.9	1.03	-.43
.594	-3.26	-2.62	7.17	-6.63	-5.37	-4.66	-1.437	2.849	-1.293	2.271	-.017	.731	628.29	1453.3	1.07	-.45
.610	-3.46	-2.80	7.59	-6.43	-4.88	-5.83	-1.406	2.849	-1.247	2.214	-.017	.710	627.42	1450.2	1.11	-.46
.618	-3.57	-2.90	7.81	-6.31	-4.63	-6.42	-1.395	2.863	-1.224	2.198	-.018	.707	629.78	1453.1	1.13	-.47
.626	-3.67	-2.99	8.03	-6.17	-4.36	-7.01	-1.378	2.867	-1.187	2.155	-.017	.700	628.85	1452.1	1.15	-.47
.634	-3.77	-3.09	8.26	-6.02	-4.09	-7.61	-1.362	2.868	-1.164	2.135	-.016	.694	628.63	1454.7	1.17	-.48
.642	-3.88	-3.19	8.49	-5.85	-3.80	-8.21	-1.325	2.836	-1.119	2.075	-.015	.688	626.09	1447.6	1.18	-.48
.650	-3.99	-3.29	8.72	-5.66	-3.51	-8.81	-1.304	2.829	-1.084	2.031	-.013	.678	629.57	1454.0	1.20	-.49
.658	-4.10	-3.39	8.96	-5.46	-3.21	-9.41	-1.272	2.843	-1.038	1.989	-.012	.668	627.38	1451.8	1.22	-.49
.666	-4.21	-3.49	9.20	-5.24	-2.90	-10.02	-1.238	2.770	-.997	1.948	-.012	.663	628.08	1453.1	1.24	-.50
.674	-4.32	-3.59	9.44	-5.00	-2.59	-10.63	-1.195	2.722	-.942	1.867	-.012	.658	626.48	1450.4	1.26	-.50
.682	-4.43	-3.69	9.69	-4.75	-2.27	-11.24	-1.155	2.676	-.896	1.809	-.012	.653	627.13	1451.2	1.27	-.51
.690	-4.55	-3.79	9.94	-4.49	-1.94	-11.84	-1.111	2.610	-.826	1.726	-.010	.644	626.97	1451.6	1.29	-.51
.698	-4.66	-3.90	10.19	-4.21	-1.61	-12.46	-1.060	2.545	-.777	1.667	-.010	.648	626.39	1450.4	1.31	-.51
.706	-4.78	-4.00	10.45	-3.91	-1.28	-13.07	-1.017	2.486	-.729	1.620	-.008	.646	626.75	1452.5	1.33	-.52
.714	-4.90	-4.11	10.71	-3.60	-.93	-13.68	-.959	2.376	-.661	1.522	-.008	.646	623.78	1445.6	1.34	-.52
.722	-5.02	-4.21	10.97	-3.28	-.59	-14.29	-.895	2.264	-.616	1.489	-.008	.645	628.18	1453.1	1.36	-.52
.730	-5.14	-4.32	11.24	-2.94	-.24	-14.90	-.828	2.116	-.554	1.392	-.005	.656	625.94	1449.8	1.37	-.52
.738	-5.26	-4.42	11.51	-2.60	.12	-15.51	-.742	1.918	-.470	1.283	-.002	.648	626.54	1447.2	1.39	-.53
.746	-5.38	-4.53	11.78	-2.24	.47	-16.12	-.662	1.719	-.398	1.144	.001	.643	629.27	1452.1	1.41	-.53
.750	-5.44	-4.58	11.92	-2.05	.65	-16.42	-.619	1.623	-.356	1.059	-.002	.646	628.87	1452.1	1.41	-.53

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